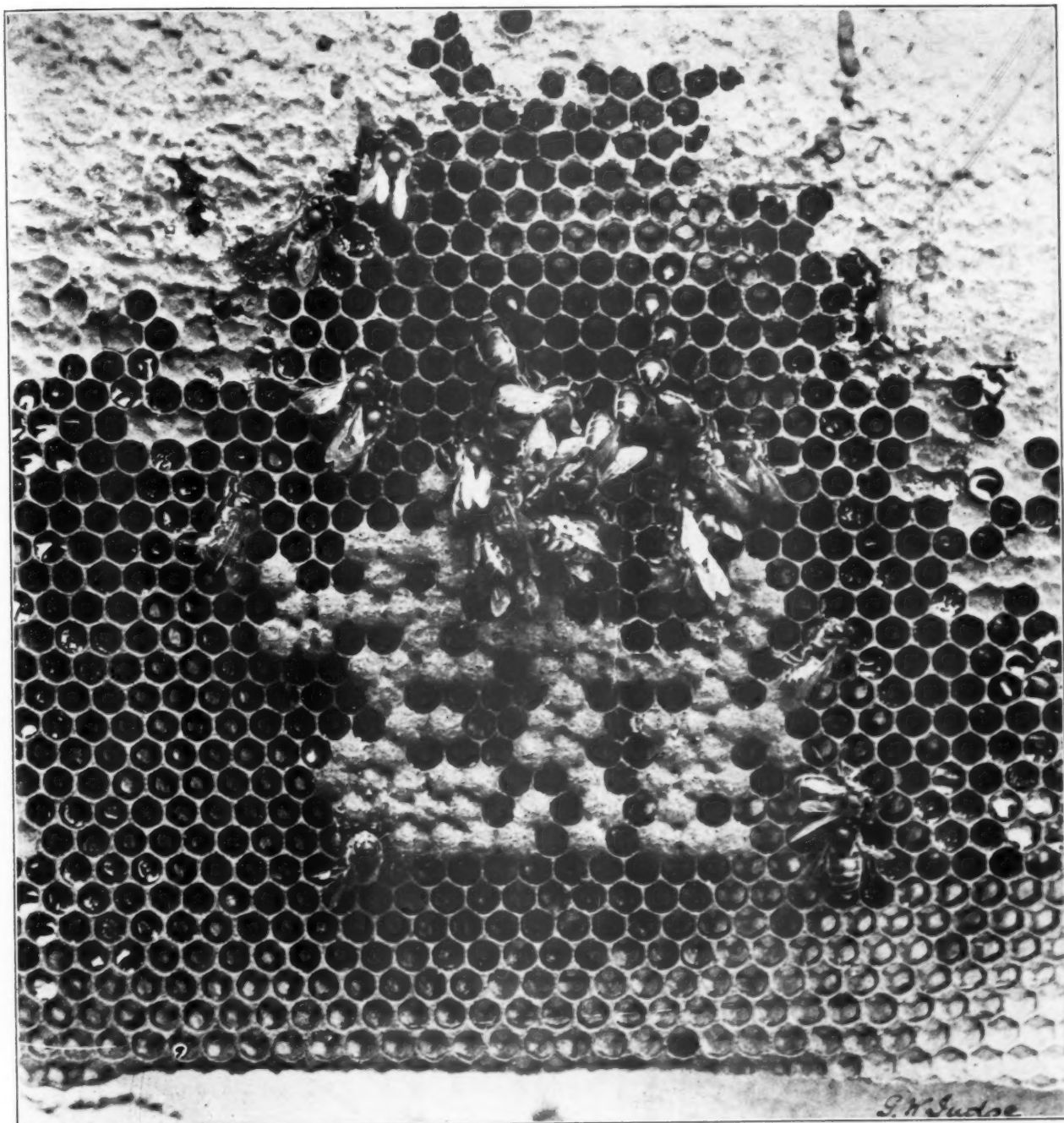


AMERICAN BEE JOURNAL

AUGUST

1914

Calif. State Library depts.
Sacramento, Calif.



Isle of Wight Bee Disease

Showing queen among small cluster of dead bees on comb, taken from center of brood-nest in early spring.

See contribution by G. W. Judge.

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American Bee Journal



PUBLISHED MONTHLY BY
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 1st Nat'l Bank Bldg. Hamilton, Illinois

IMPORTANT NOTICE

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Universal Exposition, St. Louis, U.S.A., 1904, HIGHEST AWARD
 Dominion of Canada, Department of Agriculture, Central Experimental Farm.

OTTAWA, Sept. 5, 1913.
 Sir:—I am pleased to inform you that the three queens were received in good condition, and have been safely introduced.

(Signed) C. GORDON HEWITT,
Dominion Entomologist.
 Oklahoma Agricultural Experiment Station.
 STILLWATER, Oct. 7, 1913.

Your queen arrived in first-class condition, and introduced her without any difficulty.
 (Signed) PROF. E. C. SANBORN,
State Entomologist.

Extra Breeding Queens, \$3.00; Selected, \$2.00; Fertilized, \$1.50; lower prices per dozen or more Queens. Safe arrival guaranteed. Write

Member of the) **ANTHONY BIAGGI,**
 National Bee-keepers' Ass'n) Pedevilla, near Bellinzona,
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This country, politically, Switzerland Republic, lies geographically in Italy, and possesses the best kind of bees known.

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 Write in English for Book-
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EQUIPMENT Store room built expressly for the business; large concrete basement with just enough moisture to prevent breakage in sections. No shrinkage in dovetailed corners of supers and hives.

QUALITY Root goods at factory prices. The kind that I have sold for nearly a quarter of a century, and the kind that you can afford to recommend to your neighbors. I might have increased my profits for a short time by handling other goods, but I would not have remained so long in business. Many articles in my catalog can reach you by Parcel Post, and I assume all responsibility in safe delivery of the goods. Catalog free.

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For Beginners or Old-timers

Lots of good tips on raising those wonderful little money makers in this book—describes our complete line of bee supplies.

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Little expense, fascinating pastime. Act on good impulse, start right now.

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and most complete line of Bee and Poultry Supplies ever seen in Illinois at the lowest living prices. Satisfaction guaranteed or money refunded. Established in 1890. Send for our new catalog. Let us hear from you.
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QUINN'S QUEENS OF QUALITY

Not coming, but are here to stay. Best bee for any climate. Purest of the pure

GREY CAUCASIANS

Bred strictly in the light of Mendel's Laws of Heredity; no guess, but positive results. The pioneer scientific queen-rearing establishment of America. We lead, others may follow. Every queen guaranteed as to purity of mating.

Special isolated mating station on bald open prairie, not a tree within miles—no chance for gypsy drones.

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One-piece cover, bottom and back, one-fourth inch thick and smooth on both sides.

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One-piece cover and bottom makes a much better and stronger case than a pieced cover or bottom.

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Try My Famous Queens From Improved Stock.

The best that money can buy; not inclined to swarm, and as for honey gatherers they have few equals.

3-Band, Golden, 5-Band and Carniolan Bred in Separate Yards

Untested, one, 75c; 6, \$4.25; 12, \$7.50; 25, \$14.25; 100, \$50. Tested, one, \$1.50; six, \$8.00; 12, \$15. Breeders of either strain, \$5. Nuclei with untested queen, one-frame, \$2.50; six one-frame, \$15; two-frame \$3.50; six two-frame \$20.40; nuclei with tested queen, one-frame, \$3.00; six one-frame, \$17.40; two-frame, \$4; six two-frame \$23.40. Our Queens and Drones are all reared from the best select queens, which should be so with drones as well as queens. No disease of any kind in this country. Safe arrival, satisfaction, and prompt service guaranteed.

D. E. BROTHERS, Attalla, Ala.

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(Trade mark.)



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Such as Winter-cases, Sections, brood-frames of every description, Section holders, Comb Foundation, Supers, Hive-bodies, Smokers, etc.

Get my prices before placing your orders.

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NEW BINGHAM
BEE SMOKER
Patented

nearly forty years on the market, and the standard in this and many foreign countries. The all-important tool of the most important honey-producers of the world. Such men as Mr. France and the Dadants use the Bingham. By co operation Mr. Townsend uses six Smoke Engines. For sale at your dealers or direct. Postage extra.

Smoke Engine, 4-inch stove; wt. each 1 1/2 lb. \$1.25
Doctor, 3 1/2-inch stove; wt. each 1 1/2 lb. .85
Two larger sizes in copper, extra. .50
Conqueror, 3-in. stove; wt. each, 1 1/2 lb. .75
Little Wonder, 2 1/2-inch; wt. each 1 lb. .50
Two largest sizes with hinged cover.

Woodman Style Veils

Our veils contain 1 1/2 yards of the best material for the purpose—imported French tulle veiling. They are made with a rubber cord in the top to fit around the hat, and the lower edge has the cord arrangement, the two ends going around behind the body, and back in front to tie. This arrangement holds the veil down on the shoulders snugly, away from the neck, and permits the wearer to handle bees in his shirt sleeves with no chance of bees crawling up and under veil. With a hat of fair size brim to carry veil away from the face, you are as secure from stings, movements as free and unrestricted, and as cool and comfortable as you would be at a summer resort.

All cotton, each, postpaid. .50
Cotton with silk face, each, postpaid. .60
Bee-hat, flexible rim, fits any head, postpaid. .35
Extra silk face piece, postpaid. .10
Long-sleeve bee-gloves, postpaid. .35

Such men as R. F. Holtermann, J. E. Crane & Son, N. E. France, and many others all over U. S. A., order a supply of these veils each season, year after year.

A. G. Woodman Company, Grand Rapids, Mich.

We Make a Specialty of Manufacturing SECTIONS

They are the Finest in the Land—None Better.

Our Prices will make you smile. We want to mail OUR BEE-SUPPLY CATALOG to every bee-keeper in the land. It is FREE. Ask for it.

H. S. Duby, St. Anne, Ill., carries a full line of Our Goods, and sells them at our regular catalog prices.

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QUEENS x QUEENS

Bees by the pound and full colonies From a superior strain of three banded Italians. Hardy, gentle, and they are hustlers. Guaranteed to please you.

Send for my 1914 descriptive catalog I have a large stock of modern Bee Supplies always on hand. Root's Goods at factory schedule of prices packed and delivered to my station. All orders will receive prompt and careful attention.

EARL M. NICHOLS,
Lyonsville, Massachusetts

Gray Caucasians Best Bee for Everybody

Glass Honey Dishes
The Handiest Dish in the Home

Cambed Bee-brush and Hive Tool
A Great Tool for the Bee Yard

Ant Dope
Guaranteed to Rid Everything of Ants

Prices sent free. Write to-day.

A. D. D. Wood
Box 61, Lansing, Michigan

QUEENS of MOORE'S STRAIN of ITALIANS

PRODUCE WORKERS

That fill the supers quick
With honey nice and thick.

They have won a world-wide reputation for honey gathering, hardiness, gentleness, etc.

Untested queens, \$1.00; six, \$5.00; 12, \$9.00
Select untested, \$1.25; six, \$6.00; 12, \$11.00
Safe arrival and satisfaction guaranteed.

Circular free. **J. P. MOORE,**
Queen-breeder Route 1, Morgan, Ky



American Bee Journal

"falcon" QUEENS

Three-band and Golden Italians, Caucasians and Carniolans

SELECT Untested, July 1st to Oct. 1st, one, \$.85; six, \$4.50; twelve, \$ 8.50
 Untested, July 1st to Oct. 1st, one, 1.00; six, 5.50; twelve, 10.00
 Tested, \$1.50 each. Select tested, 2.00.

All queens are reared in strong and vigorous colonies, and mated from populous nuclei.

Instructions for introducing are to be found on the reverse side of the cage cover.

A full line of bee supplies and foundation manufactured by us at Falconer, N. Y.

Write for samples of our foundation and Red Catalog, postpaid.

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Red Catalog, postpaid

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W. T. FALCONER MFG. CO.,

FALCONER N. Y.

Where the good bee hives come from

Root's Goods in Michigan

Our Specialty—The "Root Quality" Bee Supplies to Michigan Beekeepers Prompt Service in Shipping. We sell at factory prices. Beeswax Wanted Send for 1914 Catalog showing our Parcel Post Service.

M. H. Hunt & Son, Dept. A, Lansing, Mich.

When You Need Queens

We will be pleased to fill your order. Our business of rearing queens was established in 1886. We know what it means to have a good strain of bees and queens that stand second to none. Three-band Italians only—bred for business and free from disease. Tested, \$1.00 each. Untested, 75c; \$7.00 a do

J. W. K. SHAW & CO., Loreauville, La.

Gleanings in Bee Culture for 1914.

The Magazine for the Beginner, Back-lotter, and Specialist Beekeeper

For several years we have been doing our best to make GLEANINGS an indispensable publication for the wide-awake beekeeper whether he has but one colony, a small suburban apiary, or a series of out-apiaries numbering hundreds of colonies in all. We believe we have never received such enthusiastic approval of our efforts as we received in 1913, when hundreds of letters from our friends told of their appreciation. We wish that we might print a number of them here, but we prefer to utilize the rest of the space for outlining our plans for 1914. For 1914 we shall continue the special numbers, the feature which has so delighted our readers during the last three years. In deciding just what subjects to take up, we have not selected topics at random, for we have been guided by expressions of the majority.

JANUARY 1—Bees and Poultry.—

We think we are safe in saying that no special number that we ever published proved so popular as our February 15th issue for 1912. In getting out another special number devoted to the interests of poultry-raising and beekeeping, we propose to surpass our former efforts and to get together the best material possible on poultry raising from the beekeepers' standpoint.

FEBRUARY—Bees and Fruit.—

Our March 15th issue for 1912 has been used far and wide by beekeepers and fruit-growers alike to show the value of bees in large orchards. In the two years that have elapsed, however, so much new material has developed that in order to be entirely up to date it is really necessary to have another special number on the same subject. We have a wealth of material that has never before been given to the public. Extensive fruit-growers, who are not especially interested in honey-production, will tell of the value of bees in orchards.

MARCH 1—Beekeeping in Cities.—

Probably few beekeepers realize the number of beekeepers there are in every large city. City beekeeping is a most interesting topic, and in addition to stories of beekeeping told by professional men, we shall have discussed various problems connected with bees in

attics, or roofs, and in back lots. We also have a true story of a beekeeper in a city who was fined \$100.00 because his bees were considered a nuisance, and who afterward appealed to a higher court and won out. A good story.

APRIL—Breeding.—

Ever since we first began having special numbers there have been requests on the part of a good many of our readers for a special number on breeding. We are glad that we are able to arrange for it this year, for it is a fact that very little is known in regard to breeding bees. Breeding is one of the most important subjects connected with our pursuit. We shall publish special articles by noted queen-breeders on qualifications of breeding queens. Queen-rearing both for the small beekeeper and the specialist will be fully discussed.

JUNE 1—Moving Bees.—

We, ourselves, expect to move 300 colonies of bees to Florida, get a good honey crop, double the number of colonies, and move them back again in the spring. Details of moving by boat, wagon, auto-truck, and by rail will be fully described and illustrated, and other large beekeepers having experience along this line have also promised articles for this number.

AUGUST 1—Crop and Market Reports.

—There has never yet been a systematic effort put forth for the compiling and publishing of comprehensive crop and market reports from various parts of the country. In 1914 we are going to make the effort of our lives to get telegraph reports from important fields, such as the clover-belt, Texas, Colorado, Idaho, and California, etc. These will be published right along as soon as we get them, but in this August 1st issue we shall have a grand summary of the crop reports and conditions of the market in general. No beekeeper should miss this important number.

SEPTEMBER 1—Wintering.—

We have not yet learned all there is to be learned in regard to wintering. A number of specialists are going to make experiments during the winter of 1913-14, which experiments will be published in this number. We shall also give our own experience summed up as to feasibility of wintering northern apiaries in the South.

IS NOT ALL THIS WORTH WHILE?

We have now given you our plan for 1914. If you are now trying to make the most out of your bees, we feel sure you cannot afford to miss such a wealth of information as the subscription price, \$1.00, will bring you.

The A. I. ROOT COMPANY, Medina, Ohio

HONEY AND BEESWAX

CHICAGO, July 20.—A little of the honey harvest of 1914 is on the market, but it is meeting with very little demand, and prices are not at all firm. Sales are being made at from 14@15c per pound for the best grades of white comb honey in one-pound section frames with the ambers at from 1@3c per pound less. Extracted ranges from 7@9c per pound for the white grades, and from 6@8c for the amber, all according to flavor and other qualities. Beeswax continues to sell upon arrival at 35c per pound if of good color, free from sediment or adulteration of any kind. R. A. BURNETT & CO.

LOS ANGELES, July 20.—A large proportion of the crop in California has suffered seriously during the past year on account of disease among the bees. As a result there are fewer bees working this year, but the yield per colony is much better than it was last year in most districts. The orange crop was small this season, amounting to only about one-half of last year's production, and this kind of honey is practically all sold. The crop from sage and other mountain flowers has been of exceptionally fine quality, and the yield has been quite good, whereas last year white sage was practically a failure. Alfalfa honey seems to be quite plentiful, and is freely offered at 1c per pound less than the average price of last year. Market conditions have been very satisfactory so far this season, the demand being very poor, even though prices are much lower than during the previous season. Although wax has sold at unusually high prices throughout the spring, the market is considerably easier now. New wax is being received in small quantities, and will no doubt be plentiful before long. HAMILTON & MENDERSON.

CINCINNATI, July 2.—There is very little demand for honey of all grades, for the reason that business in general is below normal. In fact, it is very dull, and we find sales difficult to make. However, there are shipments of new honey headed this way, both comb and extracted honey, and perhaps its arrival will give the demand an impetus. Until the conditions are settled we refrain from quoting prices. THE FRED W. MUTH CO.

BOSTON, July 17.—Fancy and No. 1 white comb, 15@16c per pound. Fancy white extracted in 60-pound cans, 11c per pound. Beeswax, 30c. BLAKE-LEE COMPANY.

INDIANAPOLIS, July 14.—Very little honey

is moving. Much comb has been carried over from last year. The demand is good for extracted, but as yet no prices are established. Producers of beeswax are being paid 32c cash, and slightly higher when goods are taken in payment. WALTER S. POWDER.

DENVER, July 15.—We have no more old stock of comb honey to offer. We are selling extracted in a jobbing way at the following prices: White extracted, 8c; light amber, 7c. We pay 32c per pound in cash and 34c in trade for clean yellow beeswax delivered here.

THE COLO. HONEY-PRODUCERS' ASS'N.
Frank Rauchfuss, Mgr.

SAN FRANCISCO, July 20.—Comb honey is 13@14c per pound for fancy; 11@12c for light amber; 10c for amber. Extracted honey, white, 8@10c; light amber, 6@8c; dark, 5@5½c. Some of the new extracted honey has come in, in small quantities, the cold weather having interfered with the prospects of early honey, and some of the beekeepers are complaining. JOHN C. FROHLIGER.

KANSAS CITY, MO., July 15.—There is no change to note in our honey market. No new comb coming in, and our market is well supplied with extracted honey. Weather is still hot, consequently no demand to speak of for extracted. We think the first shipments of honey will sell as follows: No. 1 white comb, 24-section cases, \$3.25 to \$3.50; No. 2, \$2.75 to \$3.00; No. 1 amber, \$3.00 to \$3.25; No. 2, \$2.75 to \$3.00. No. 1 extracted, white honey, per pound, 7½@8c; amber, 7@7½c. No. 1 beeswax, per pound, 25@30c. C. C. CLEMONS PRODUCE COMPANY.

NEW YORK, July 17.—There is practically nothing new to report. Some new crop comb honey is arriving from the South, and fancy stock is selling at 16c; lower grades, 12@14c, all according to quality. We still have a lot of last year's stock on hand, all off grades, more or less candied, for which there is absolutely no sale at any reasonable price.

As to extracted, the market is quiet, and no prices have been established as yet for the new crop, on California. Western or Eastern honey; in fact, there is none in the market as yet, excepting from the South, which finds fairly good sale at former quotations. Beeswax is more plentiful and in less demand. Prices ranging from 34@36 per pound. HILDRETH & SEGELKEN.

Miller's Strain Italian Queens

By return mail or money refunded. Bred from best RED CLOVER STRAINS in the United States. In full colonies, from my SUPERIOR BREEDERS, northern bred; for business; long tongued; leather color or three-banded; gentle; winter well; hustlers; not inclined to swarm; roll honey in. Untested, 1, 75c; 6, \$1.00; 12, \$7.50. Select untested, one, \$1.00; 6, \$5.00; 12, \$5.00. A specialist of 17 years' experience. Safe arrival and satisfaction guaranteed.

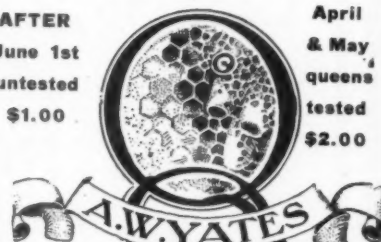
I. F. MILLER, - BROOKVILLE, PA.

"NUTMEG" ITALIAN QUEENS

By return mail.

AFTER
June 1st
untested
\$1.00

April
& May
queens
tested
\$2.00



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HARTFORD, CONN.

Write for prices by the hundred.

PONTIAC ENGRAVING CO.
ARTISTS
ENGRAVERS-ELECTROTYPERS
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PONTIAC BLDG. CHICAGO.

Untested Italian Queen-Bees

Our Standard Bred

6 Queens for \$6.00

3 for \$3.50

1 for \$1.25

For a number of years we have been sending out to beekeepers exceptionally fine Untested Italian Queens purely mated, and all right in every respect.

The price of one of our Untested Queens alone is \$1.25, or with the "old reliable" American Bee Journal for one year, both for \$1.60. You cannot do better than to get one or more of our fine Standard-bred Queens.

AMERICAN BEE JOURNAL
Hamilton, Illinois

Notice, Secretaries!

We want the name and address of the Secretary of every beekeepers' association in the United States and Canada, also the dates on which the Convention or Field Day of the coming season will be held; also other detailed information in regard to the forthcoming convention.

THE AMERICAN BEE JOURNAL

Is at the service of Beekeepers' Organizations, and we cannot render full and complete service unless he have the necessary information from the associations. We trust every American Bee Journal reader whose eye catches this notice who is a member or a friend of a member of a beekeepers' organization, will make it a point to call the secretary's attention to this notice and advise him to forward us the necessary information.

AMERICAN BEE JOURNAL, HAMILTON, ILL.

BE CAREFUL OF YOUR HONEY CROP

Now that you are through with all the anxious work preliminary to
gathering in the honey

**Look to It that Your Honey Crop Goes
On the Market Right!**

**See that Your Honey Is In
Lewis Sections**

The sections that are scientifically right—made out of nice bright Wisconsin basswood
The manufacture of Lewis Sections is watched over by experts

Lewis Sections Fold Perfectly

**Lewis Shipping Cases
ARE SUPERB**

Do not cheapen your product by inferior cases. You can afford the best
Remember, your shipping cases are the show windows for the sale of your goods
Your honey will bring more money if well displayed

INSIST ON THE LEWIS MAKE

G. B. LEWIS COMPANY, Watertown, Wis.,

Sole Manufacturers

Thirty Distributing Houses

Send for the name of the one nearest to you



(Entered as second-class matter at the Post-office at Hamilton, Ill., under Act of March 3, 1879.)

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C. P. DADANT, Editor.
DR. C. C. MILLER, Associate Editor.

HAMILTON, ILL., AUGUST, 1914

Vol. LIV.—No. 8

EDITORIAL COMMENTS

Edition of Iowa Bulletins Exhausted

Mr. Frank C. Pellett, State Inspector of Iowa, states that the demand has been so great for Reports of the Bee Inspector of Iowa, that the supply will be exhausted within a short time. These Reports can no longer be sent out on requests outside of the State owing to the limited quantity.

Always Interesting

The "Guide to Nature" is always interesting, but its July number is unusually fine. Among curious photographs it contains one of a rooster in the act of crowing. The flash was taken at the proper moment.

Minnesota State Beekeepers

The "Minnesota Horticulturist" contains a report of the joint session of the Minnesota State Horticultural Society with the Garden Flower Society, the Beekeepers' Society and the Florists' Society on June 16, but it has only this to say of the beekeepers:

"The beekeepers were out in considerable force, but they withdrew themselves at a respectable distance where they could talk bees and manipulate them without interfering with the comfort and happiness of the other members of the society. Nothing seems to be more absorbing than the study of the bee, as judging from the interest that that society takes in its work."

Honey Plants of Iowa

We have received the following letter from Dr. L. H. Pammel, the Botan-

ist of the Iowa Agricultural Experiment Station. Dr. Pammel is a man of great ability, who is already the author of two large botanical works, "A Manual of Poisonous Plants of Eastern North America," and "The Weed Flora of Iowa," which was noticed in our April number, page 116.

We trust the beekeepers of Iowa and surrounding States will heed the request and lend their help to this able worker in producing a useful work for this section. The cooperation of the American Bee Journal is freely extended:

The Botanical Section of the Iowa Agricultural Experiment Station is making a study of the honey plants of Iowa. This study will take some years to be completed. It is hoped to obtain information on all honey plants, and the insects which visit the flowers for nectar and pollen. We would like, therefore, to get the help of all persons interested in honey-producing plants.

We would be pleased to have the beekeepers send us not only lists of plants visited by honey bees, but specimens of the plants as well; also notes on the flow of honey in different plants. It is highly desirable to have information on the relation of the honey flow to precipitation, e. g., when does the greatest flow occur; in dry weather, medium dry or moist?

Any information which you or your readers are able to give us will be appreciated. Any communications should be sent direct to me. L. H. PAMMEL.

"The Times of Cuba"

Through the kindness of Mr. D. W. Millar, our correspondent in Cuba, we are in receipt of a copy of the July issue of "The Times of Cuba." He

states it is the best English publication on the island, and reaches, perhaps, as nearly every English speaking person in Cuba and the Isle of Pines as is possible.

The July number is indeed very fine, and a credit to its editor. In the magazine are included authentic reports from correspondents in different sections of the island. Any one interested in Cuba should write to Mr. E. F. O'Brien at Havana, Cuba, for a specimen copy.

Destroying Disease Germs by Heating

The United States Department of Agriculture has issued Bulletin No. 92, written by G. F. White, M. D., Ph. D., as mentioned on page 224. The name of the writer at once stamps it as a bulletin of special interest to beekeepers. A series of experiments has been made by Dr. White, which results in the determination of the lowest point of heat sufficient to destroy the germs of infectious bee-diseases, provided that temperature be steadily maintained for 10 minutes. The different degrees for the different diseases are:

| | |
|-----------------------------|-------|
| For European foulbrood..... | 145.4 |
| " American foulbrood..... | 208.4 |
| " Sacbrood..... | 136.4 |
| " Nosema disease..... | 134.6 |

It is a matter of much satisfaction to have definite knowledge upon these points. It may not be easy for every beekeeper to know the exact temperature at which a quantity of honey stands, but it is not difficult to determine when it is boiling, and reference to the figures given shows that boiling fills the bill in each case. There is danger, however, that the serious mistake be made of raising the outer part of a mass of honey to the boiling point, while the center of the mass is much

American Bee Journal

below that point. This is especially true in the case of granulated honey. It will be well not to hurry the process. First, bring the entire mass to the liquid state, allowing plenty of time without keeping the honey very hot. If there is no objection to having the honey thin, it will be well to add water. Then bring up the heat until it is certain that the center is boiling, and keep up the boiling for 10 minutes. Honey thus treated ought to be safe to feed to bees. It is hardly necessary to add that if the honey is meant for winter food for bees, care must be taken not to scorch it, else it will be death to the bees.

C. C. M.

Honey Exchange for Minnesota

"The Tri-State Honey Exchange" is the name of a new organization in

Minnesota formed but a short time ago with L. F. Sampson as president, and P. J. Doll as secretary. Other directors are L. D. Leonard, L. M. Bussey, and Rev. Francis Jager.

The capitalization of the company is \$1000, divided into shares of \$10 each. The exchange states that it has for its object "to assist honey producers in Minnesota, Iowa and Wisconsin to market their honey and obtain the highest prices, the profit of the association to go to the producer."

Like all other co-operative concerns, its success depends upon the support given. There is no reason why such an incorporation could not work in harmony with the National association which has the same purposes, the marketing of the honey-producers' crop.

conditions are local to this part of Wisconsin. N. E. France.
Platteville, Wis., July 12.

The honey-flow has been a total failure here; have to feed to keep the bees from starving until the fall flow. I have over 400 colonies, half of them are located in a good clover district. There is a lot of clover bloom and the weather has been ideal, but the hives are empty. I hope for a crop from Spanish-needle next month.

Knox, Ind., July 13.

F. W. Luebeck.

The clover honey crop was a total failure in our locality. Reports received from other points indicate the same condition nearly all over the province, a few localities only reporting a very light yield from clover. Basswood looks fairly well where they have this source of nectar, but at best it is an uncertain yield to the few localities that have enough of the trees to amount to anything. Present prospects point to the lightest yield of white honey that Ontario has known for some time.

J. L. Byer.

Mount Joy, Ont., July 13.

We give you crop reports as they have recently come to us:

COLORADO—LOWER PLATTE VALLEY—Very little from first crop of alfalfa. Bees are in good shape, and if favorable conditions should prevail from now on, a fair crop is possible.

VICINITY OF DENVER—Super work is getting along nicely, and some comb honey has been taken off, but as there is very much less sweet clover than last year, the crop is likely not to be large.

FORT COLLINS, LONGMONT, BOULDER—Super work has almost stopped at present, but it is hoped that when the second crop of alfalfa comes in bloom, it will be resumed again.

ARKANSAS VALLEY—Reports from this locality are conflicting. In some places bees so far have done well, and honey has been taken off. In other places not much super work is done.

MONTEROSE AND DELTA DISTRICTS—But little honey in sight yet. Many bees in the orchard districts have been poisoned by spraying clover beneath fruit trees.

NORTHERN NEW MEXICO—Some honey has been taken off. Prospects for a good crop. It is not likely that the Colorado honey crop will be as good as last year, probably two-thirds as much. The quality of the honey taken off so far is fine.

Colorado Honey Producers' Association,
F. Rauchfuss, Mgr.

Denver, Colo., July 14.

Your letter of July 10 asking for a report on honey conditions is received. Bees are not doing very much right now, but the second crop of alfalfa is just coming into bloom and we should have a good flow during the next six weeks if the weather is favorable. A good rain would help a great deal. I have taken off something over a ton of extracted honey and 17 cases of comb honey. Prospects are very poor in some districts, but about normal in others. I think we will have honey to ship this year in fair amounts, although we will not have more to ship than last year despite the increased number of bees.

Wesley Foster.

Boulder, Colo., July 14.

Late severe frosts with very hot days have cut down the alfalfa and about destroyed all bloom. The chances for a honey crop are very poor. I am feeding the bees.

Halleck, Nev., June 26.

J. E. Patton.

This section produced no surplus this season. Many colonies had to be fed after clover had been in bloom for some time, but later the flow was heavy enough to give the bees stores to last until it will be time to weigh up and supply additional stores for winter.

It is the "off year" for basswood bloom, and the heavy stand of clover produced but very little nectar on account of very unfavorable weather conditions.

E. L. Hofmann.

Janesville, Minn., July 16.

The honey crop in this section of Ontario will not be more than 10 percent of an average crop. Some report no honey at all, others have had to feed to keep their bees in good condition and prevent starvation.

Claude, Ont., July 17.

H. G. Sibbald.

The white honey crop will be very light in New England, so far as I can learn—less than half an average crop.

Middlebury, Vt., July 18.

J. E. Crane.

The honey crop in this vicinity is rather uncertain at this date. Should the right

MISCELLANEOUS NEWS ITEMS

Crop Reports and Prospects.—The season of 1914 may be said to be unique in that the large proportion of reports coming of prospects previous to the opening of spring were very favorable towards at least a normal crop if not a very large one. California reported fine prospects, the same was true of Texas, while in the central States and in the East reports came in that clover was plentiful and that honey should be also.

The fact is that these advance "dope sheets" were so alluring that many beekeepers pictured a big slump in the price of honey owing to over-production. Let the reader judge for himself as to the proportion of a normal crop as reported by some of the largest pro-

ducers in all parts of the United States, men well situated to know what the crop is. We give replies received to all our letters with reference to crops this season. They follow:

At the opening of spring of 1914 around here clover prospects were the best for many years, and with frequent rains up to July 1, the plants and abundance of bloom were all we could hope for. We also had cold nights which prevented nectar in the bloom, and it has been rare to see a bee on either white or alsike clover bloom. Our bees were extra strong, and we encouraged brood-rearing. When blooming season came our hives were full of bees (20 Langstroth frames.) Basswood bloom was also abundant, and for five days has yielded well, so that our hives are now full of honey, two to four bodies above the brood. Yesterday we extracted 2750 pounds of basswood honey from one out-apiary. The other apiaries are the same. Nothing more this season. These



Part of the Vetter Bros. apiary near Crawford, Nebr. This country is becoming much better for bees with increase in acreage of alfalfa.

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weather conditions continue for 10 to 15 days longer we will get a normal crop of about 50 to 75 pounds per colony. The main honey flow is on now and is heavy. A change to cool or windy weather from now on would be disastrous. Virgil Sires.

North Yakima, Wash., July 15.

We have in the prairie or lime section of this State from nothing to a half crop. Some yards are a complete failure; others had showers and will possibly get a half crop. Plenty of bloom but too dry to secrete nectar. One of our yards did not have rain from the last week in April to the last week in June. But little honey in melilotus after the month of June. W. D. Null.

Demopolis, Ala., July 16.

The white honey flow of the present season has yielded a fairly good average crop in this locality. With a gradual beginning of about a week from alsike clover and a tapering off of the same length of time from sweet clover the clover flow lasted from the middle of June until the middle of July, the heaviest flow being from white clover. Up to date, July 18, bees are still bringing in a little honey from sweet clover during the early morning and forenoon hours. The yield from better colonies is from 10 to 150 pounds of extracted honey, and quite a few of the comb-honey producers are working in their fifth and sixth supers.

La Salle, N. Y.

G. C. Greiner.

We do not feel that we will have to resort to feeding just yet, though we may have to later on. We have not taken off any honey yet, and will not likely as the clover is drying up. In fact, the clover has not been much at any time, and basswood has not yielded anything beyond what the bees used.

Colo, Iowa, July 15.

F. W. Hall.

The season opened early and well, with the bees getting much early pollen and sufficient honey to make them breed rapidly. The result was more swarms than we have had in several years. Unluckily the season did not prove so good all through. At this date we might estimate the honey production at 75 percent of normal in quantity and 85 percent in quality.

Hagerman, New Mexico.

H. C. Barron.

It is too early yet to make a definite report. Reports from my men in Idaho and Utah, to days ago, indicated very poor prospects. But since, the bees are gathering honey, I estimate from one-half to three-fourths of a normal crop, but conditions could change yet for better or for worse.

Logan, Utah, July 14.

N. E. Miller.

Our crop has been a short one, about one-half a normal crop, and practically all the honey is now sold. In the extreme south the season is not over until November, as we

usually get a crop of fine white honey in the fall.

San Benito, Tex., July 15.

We always have a good honey crop in the Imperial Valley. What we call a poor year gives us better than the average of the State. My yield this year will probably be 20 percent above normal. On account of a steady increase in the number of bees here, the amount of honey shipped from the valley will show a greater increase. I have increased from 720 to 1000 colonies this season.

Brawley, Calif., July 14.

J. Edgar Ross.

All southern California sections are under half crop. Ventura and Santa Barbara counties about one-fourth yield. I think you can safely put the southern California crop at 40 percent of normal. Northern California is backward and too early to report on crop. Prices are dull. Honey is of excellent quality. See my department.

Orange, Calif., July 15.

J. E. Pleasants.

Up to July 1, the prospects were the worst they have been for four years; since then they have been fair. Will have one-third to one-half crop, depending upon the weather.

Nampa, Idaho, July 17.

L. C. McCarty.

Conditions are about normal here. Bees are self sustaining now, and possibly storing a little. The crop this year was about 75 percent, the shortage being caused by high winds in the midst of the flow.

S. S. Alderman.

Wewahitchka, Fla., July 16.

Let not the reader be led to the conclusion, from the above reports, that the crop is very short. Fact is, many of the localities are yet to have a part of their flow, while some of the localities which report a fair to average flow are among those which furnish the largest quantities of honey for the market.

We sincerely believe that the shortage of honey in some localities this season, however, will in part make up for the large crop of the season previous, so that the honey market may remain stable. By this we do not mean that the producer should hold his honey for a higher price. Sell your honey just as quickly as you can get it off of your hands (this applies every year), but do not let it go at a sacrifice. Study your own local conditions, the conditions of the honey crop, the con-

ditions of the honey market, set your prices accordingly, and then sell what you have as fast as you can.

Meeting of Massachusetts Beekeepers.

—A joint annual Field Day meeting of the Worcester County Beekeepers' Association and Eastern Massachusetts Society of Beekeepers is to be held at the home of O. F. Fuller, Blackstone St., Blackstone, Mass., Aug. 8, 1914, under the auspices of the State Board of Agriculture. Program as follows:

12:00 m.—Basket luncheon. Coffee served by the associations.

1:00 p.m.—Address by Hon. Wilfred Wheeler, of Concord, Mass., Secretary of the State Board of Agriculture, "Massachusetts as a Honey Producing State."

Address—Dr. Burton N. Gates, of Amherst, Mass.

Bee Disease Demonstrations by John L. Byard and Dr. Burton N. Gates, Massachusetts Agricultural College. a. Materials for Beekeepers. Simple and indispensable apparatus will be explained. b. The Manipulation of Bees. Instructions for operating a colony. c. The Shaking Treatment for Brood Diseases of Bees. These demonstrations will utilize living bees and essential apparatus.

Address by Arthur C. Miller, of Providence, R. I.

Address by A. W. Yates, of Hartford, Conn. —"Bees a Necessity in Fruit Growing."

Address by E. F. Tuttle, of Woonsocket, R. I.—"Beekeeping in Early Days."

Remarks by distinguished apiarists present.

Exhibition—Beekeepers are urged to make displays. Queen bees. Bees by the pound.

A full program! Live bees! Live beekeepers! Everybody come. Ladies especially invited.

Trains to Blackstone may be reached from Boston by the New Haven road. Leaves Boston at 8:00 o'clock a.m. and 8:25 a.m. Leaves Boston at 4:30 p.m.

Trains leave Providence R. I., for Blackstone every hour.

Trains leave Worcester for Black-



CORNER OF AN APIARY OF 700 LOG HIVES AT A MONASTERY IN RUSSIA.

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stone at 10:30 a.m. and 12:15 p.m., also by electric. Return to Worcester 4:48 and 6:37 p.m., also by electric.

Blackstone may be reached by trolley from Boston via of Dedham and Franklin. It takes about 2½ hours from Dudley street. The best automobile route is via Dedham and Franklin.

Eastern Massachusetts Society of Beekeepers, T. J. Hawkins, President. Acting Secretary, 4 Emery St., Everett, Mass.

Worcester County Beekeepers' Association, O. F. Fuller, President, Blackstone, Mass.

I. S. Whittemore, Secretary, Leicester, Mass.

Native vs. Foreign Bees.—The following letter, copied from the British Bee Journal of June 25, is quite significant. Its author is evidently referring to European foulbrood:

"For the benefit of your readers I should like to give my experiences with native and foreign races of bees. I am located in a district infected with foulbrood, and for a number of years my apiary has not been free from it. I have wasted gallons of Izal and tried every known specific to cure or check it, burning on an average three colonies every season, only to find the disease triumphant the following spring. I had often read of the greater immunity from disease of the Italian and Carniolan bee, so I determined to give them a trial. Two years ago I introduced several queens of both races. I put some of them into colonies which were more or less affected with the disease. One case is worthy of special mention. Into one colony very badly affected I put a golden Italian queen, which, owing to bad weather, was rather long in getting mated.

"When brood appeared, I was gratified to see a uniform mass of pearly-white grubs without the slightest signs of disease. I closed down the hive strong in bees, with a sufficiency of stores, and waited with some anxiety the coming of the following spring to see whether the cure was permanent or not. The month of April revealed solid slabs of brood, which were a delight to look at, every cell containing an absolutely healthy grub. The colony developed into one of hurricane strength, and gave me almost 100 beautiful sections. The beauty of the bees, and the immense number were a marvel to all beekeepers who saw them.

"I should also say that every colony headed by a foreign queen proved healthy, and remained so up to the time of writing, despite the fact that they were all put into more or less affected hives. Let me turn to colonies headed by native or black queens. I had only two swarms last year, both from natives. I noticed slight traces of disease in one of them, which failed to requeen. Now for the sequel. I introduced a black virgin, which I got from a friend about a fortnight after the swarm issued. In due course she mated and commenced laying. You will observe they were treated almost similarly to the colony into which the golden Italian virgin was introduced. More than three weeks elapsed from

the removal of the laying queen until any eggs were deposited in either hive. The golden Italian headed a colony of bees of which any one might be proud, while the native black is today at the head of a rotten and dwindling handful of bees. But I am not yet finished. The other colony of natives which swarmed, and which at the time appeared quite healthy, came out this spring in a worse and weaker state than the aforementioned, and was destroyed some time ago.

"I have unfortunately still 7 colonies of blacks, 5 of which were diseased, while every one of the 12 colonies headed by Italian and Carniolan queens is healthy and very strong.

"The native bee has its good qualities, and succeeds very well in districts free from disease, but where such abounds it is helpless and a source of contagion. In face of an experience such as mine, I consider it rank heresy to advocate sticking to blacks under every condition."—CRICKSHANK, Granton-on-Spey.

Indian Exports of Beeswax.—The Indian Trade Journal in its issue of April

9, 1914, has an article on the preparation of beeswax, in which it is shown that the total exports of beeswax from India during the official year 1912-13, amounted to 7648 hundredweight (hundredweight = 112 pounds), amounting in value to \$225,822, which was considerably below the normal volume and value of exports. Almost all of this beeswax was exported to the United Kingdom and to Germany, the former during 1912-13 taking 3340 hundredweight and the latter 2580 hundredweight, and Belgium, France, and the United States taking most of the balance.

It is stated that the beeswax exported from India is the product of three species of wild bees found mostly in mountainous and hilly districts in Bengal, Assam, the United Provinces, Punjab, southern India and Burma.—U. S. Consular Report.

Willie Wants to Know

"Ma."

"What is it, Willie?"

"Is a 'sweet tooth' a tooth from a honey-comb?"

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

Equalizing Colonies

In reading the contributions of that interesting Canadian, J. L. Byer, it is often a matter of congratulation to find that we in Marengo are following so closely the practices he follows. Indeed, it rarely happens that there is any difference to be found, and when that does happen, it may be worth while to discuss it, albeit with nothing but the kindest feelings toward Mr. Byer, for it is quite possible that a face-to-face conference would show the difference much less than appears on the surface.

On page 232 of the Bee Journal for July, he says: "As a general rule it is not good policy to do equalizing before clover flow." Practice here is far from agreeing with that. The first show of any flow from white clover this year was June 6, and the record-book shows that there was no equalizing after May 18, 19 days before the clover flow, and 9 days before the very first clover blossom was seen. All the equalizing that was done—and a good deal of it was done—was done before May 18. Indeed a look at the record of the first score of colonies shows that in all but two cases the equalizing was done no later than May 4.

Mr. Byer is quite right in saying "weak colonies never want for brood provided the queen is in normal condition, and to give more brood to such colonies would be simply making the situation worse instead of improving it." That's true; if the bees have all the brood they can cover, how can they cover any more? But there is a vast

difference in the kind of brood. One frame may be filled with brood that is all, or nearly all, sealed and another with eggs and very young brood. The former will turn into active bees two weeks sooner than the latter, and it takes no more bees to cover sealed brood than unsealed and eggs. So a frame of mostly young brood in a weak colony may be exchanged for one two weeks more advanced, to the great benefit of the weak colony.

That form of equalizing is, however, not often practiced here; this year not at all. A quicker and easier way is used. As already said, the weak colony has already all the brood it can keep warm, and to give it more will only be to have it chilled. Well, then, take enough bees with the brood to keep it warm, and the trouble will be remedied. That's exactly what we do, and with a few precautions there is never any trouble.

"Even when the clover comes on I would not think of doctoring up very weak colonies at the expense of stronger ones, as it would be a losing game." That's generally true—perhaps always true, and too much emphasis cannot be placed on the unwisdom of trying to strengthen a weakling by taking from other colonies that have nothing to spare. And when the flow is on it's the strong colonies that count, just as Mr. Byer says. Better double up the weak colonies, and have fewer colonies and more bees, than to strengthen them by reducing other colonies below the effective working point. But strengthening them before the flow, is

quite another thing, and at that time no colony is too weak to be worth strengthening if it has a good queen, *provided* all other colonies are sufficiently strong—to be more specific, *provided* other colonies have not less than 5 or 6 frames of brood each.

And in this connection may be given the invariable rule, that *the weakest colonies are the last to be strengthened*. We do not always have it so, but this year there were a good many colonies with all the brood that would go into one story, and they divided with their weaker neighbors, and when all but one or two weaklings were left it was an easy thing to bring up a 2-frame concern to full strength at once. As a matter of fact we had few or no colonies very weak this year, and about the middle of May each colony had a second story given. Some started brood in the second story; some didn't.

But as already said, a personal conference with Mr. Byer might show that under the same circumstances there might be little difference of opinion.

Beginning With Bees—Danger of Stings, Etc.

Is there danger of being stung? A gentleman told my husband that sometimes one could not prevent a person from being stung, even with veils and gloves. This has prevented him from trying to keep bees. He is an old gentleman; is about to be pensioned, in another year, by the railroad, and we thought he could make some money with bees, but we will have to move first, for this place is too small. I want to move to Riverton, and am going next week to look at a place, where he can make a little and help along with expenses.

Can you help us in this?

M. H. BROWN.

Merchantville, N. J.

It is a mistake to suppose that one cannot protect oneself against stings. The most indispensable thing is the veil, and most beekeepers are satisfied with a smoker and a veil, while many do with the smoker alone. To be sure, there are bees so gentle that with careful handling one can even get along without a smoker, but generally the smoker is used. The purpose of the veil is to protect all parts of the head and neck that are usually exposed.

One good way of making a veil is to take cape net or similar open material of black color, soak the starch out of it, sew it in the form of a bag open at each end, with a rubber cord shirred into each end; slip the veil over the hat, the one rubber cord being at the hat-band while the other is stretched down in front *very tightly* and pinned with a safety-pin to vest, suspender, or other part of the clothing.

Different kinds of gloves may be used. Rubber ones are good but uncomfortable. Hog-skin gloves are good, although not very fragrant. Other leather may be used. Two thicknesses of heavy cotton will do. A pair of old shirt-sleeves may be attached to the gloves at the wrists and fastened on the arms. Thus protected, the operator is safe against voluntary attacks, but sometimes bees on the ground may crawl up the legs and sting when



A. H. FRALICK IN HIS APIARY AT HOMER, MINN.

pinched. To avoid this tie strings about the trouser-legs at the ankles; better still, use bicycle clips, or trouser-guards, such as bicyclists use.

There is a difference in bees as to their stinging. Some are so cross that veil and gloves are needed, even with plenty of smoke. Others are so gentle that they may be handled without either smoke or veil, if one makes slow movements and is careful not to handle frames roughly or jar the hive.

After a little familiarity with bees, your husband will likely not mind a few stings, and the more he is stung the less effect the poison will have. The probability is that you may be able to handle bees as well as he.

You say you will have to move to a larger place. If you have a place large enough to set the hives, that's all you want. The bees forage in all directions, and a small place should do you as well as a large one.

farther along, Mr. Greiner says that "to make bees do their best, no more than two supers must be allowed to be on a hive at a time." It would no doubt be an enjoyable thing if we could have the two men discuss fully their different view points. Mr. Wilder does not give very fully his reason for thinking that the average beekeeper does not have supers enough. Mr. Greiner is more explicit in saying why two supers at a time is enough. Yet it must be said that in this quarter the usual practice is more in accord with the Dixie man. Of course, Mr. Greiner is no novice, and it may be that for him two supers work all right, but it is a little difficult to see just how we could get along here with never more than two supers at a time. He says, "Three, four, five, and even more supers on a hive scatter the working forces over too much territory, which discourages them, and produces 'loafing.'"

The count of supers on our hives July 3, showed that quite a number of hives had on them five supers each, and a few six. To be sure, the top supers in many cases are empty, and would remain so until put down in the lowest place, but there were also quite a number of these top supers into

How Many Supers?

"Many men of many minds." On page 233 of the American Bee Journal for July, Mr. Wilder says: "The great trouble with the average beekeeper is he hasn't supers enough." Eight pages



MR. GEO. SEASTREAM IN HIS APIARY AT PAWNEE, ILL.
He has nearly 200 colonies, and winters his bees in the cellar.

American Bee Journal

which the bees had entered and begun work. It would hardly appear that the forces were so scattered as to become discouraged when they would begin work in a fifth super, empty, and *on top*. Mr. Greiner says "they must be crowded onto the foundation." That is just what seems to have been the case.

Moreover, the crops of honey we get hardly warrant the belief that our bees are too much scattered and discouraged. One can but wonder what those bees would do if the only room they had was two supers, when they are crowded to overflowing in five or more supers!

pictured and recommended in one of the Government bulletins, and for the man with a small number of hives to treat is just the thing, as there is no danger of damaging nice new bee-hives with too much fire.

Odor of American Foulbrood

Mr. E. G. Carr says that he has not found a case of American foulbrood in New Jersey, the odor of which could be detected a few feet from the hive. The case is very different in Colorado. The odor of American foulbrood is noticeable 10 to 20 feet from badly diseased hives on hot summer days. Many cases have been detected before ever touching a hive or cover.

The odor is hard to describe, and the word of people unfamiliar with the disease is likely to describe it closer than the description of the beekeeper. A good rich case of American foulbrood in Colorado smells very much "dead" and "decaying" according to several people I have asked. It has of course a distinctive odor different from a decaying mass of dead bees.

FAR WESTERN BEE-KEEPING

Conducted by WESLEY FOSTER, Boulder, Colo.

Making Increase

The making of increase by the Alexander plan did not work quite so well this year as in 1913. There is a question whether early in the season is the best time to make increase. It is all right if the colonies can all be brought up to honey gathering strength in time for the main flow. But this cannot be foretold definitely. Increase can be made in August after it is seen that the flow is good, and such increase in most cases will be ready for good wintering, and if not in the best condition it can be prepared for good wintering by giving brood and honey.

In August I take out combs of mature and hatching bees from those colonies that can well spare them, putting them into my new hives for increase. I plug the entrances with grass for several days. The grass generally wilts and lets the bees out in that time anyway. Then the bees, or most of them, stay in the new location. If the flow late in the season is good, three frames with a queen-cell or virgin queen will make a colony to winter, but if by Sept. 15 they are not strong enough I take out more brood and hatching bees and strengthen them further from populous colonies. In this way I give some of my strong colonies room for the queen to do more laying.

Honey Crop Conditions

The sweet clover along the lower Platte valley was mostly killed by the high water, so that prospects are not very favorable there. The first crop of alfalfa was cut early, and unless the second crop does something there will not be much of a crop gathered in that part of the State. The lull between first and second crops of alfalfa has been longer than usual in Boulder county, and some of our bee-men are rather discouraged. The crop here will not likely be as large per colony as last year, but there are more bees to gather it. The quality is very fine, however, thanks to the hot weather we have had, which ripens the honey so well.

Disinfecting Hives and Supers

Mr. John T. Greene says, on page 237 of the July American Bee Journal, that disinfecting with the blue flame blow torch is primitive, slow, and not so good as his method. Perhaps it is

primitive and slow, but the work done by the blue flame torch cannot be improved upon if in the hands of a good workman. The blue flame torch will reach the cracks and corners better than the method described by Mr. Greene, and I have used Mr. Greene's method on hundreds of hives.

The torch method of disinfection is



Apiary of J. E. Miller, of Caldwell, Idaho. Note the cement cover on the fourth hive in front row. "It never blows off."

BEE-KEEPING IN DIXIE

Conducted by J. J. WILDER, Cordele, Ga.

Roaches and Moths

MR. WILDER:—There are a lot of roaches in my bee-hives, and they eat considerable honey. Also, I am troubled with the moth. How can I rid my bees of these pests? I would like to get Italian bees. What is your advice in this matter? It has not rained here in four months, and I have had to feed all the time to keep my bees from dwindling. Could I sow buckwheat or

something else for them during such a honey famine? A. S. INGLIN.
Cottage Hill, Fla.

Roaches are a great nuisance sometimes about an apiary here in the South. They get in the honey house and do nearly as much harm as mice in destroying things, besides falling into honey. You can't keep them out, for they squeeze in and cut their way through almost any place. They do

not stay much in a house or room that is occupied by people or stock, but once they get started they will soon take possession of a remote room or house containing plunder or storing room of any kind.

In small colonies there will be about as many roaches as bees in the hives and around them, and they consume as much honey, if not more, than the bees, and they, too, will gnaw away the comb. The bees seem to treat them as their neighbors or friends, and not as their foes, and live together in peace. The roaches, as a rule, do not stay right in the cluster of bees, but around in the corners of the hives and places where the bees cannot go, keeping such places open so the bees cannot close them up.

I am at a loss to give a remedy or plan that will destroy this pest except just killing them as you find them, but I do know that though they may populate a place ever so much, they will after a while disappear entirely, and possibly for several years not one will be seen.

Mr. J. M. Roach, a beekeeper of Daisy, Ga., and another species of the "roach" family, says "that he could not get along in his bee-business without roaches, for his wife and children take an active part with him." Some beekeepers claim that the roaches consume but very little honey during winter, and that they help the bees in small colonies to maintain heat.

It is much easier to get rid of bee-moths. Weak colonies should never be allowed to have more comb than they can occupy, for it is in this outside or unoccupied comb that the moths develop. Such comb should be removed and set in a hive-body and placed over a strong colony when there is no honey-flow; but early in the spring and during the honey-flow these frames of comb can be exchanged for frames of brood, and in this way weak colonies may be built up to normal.

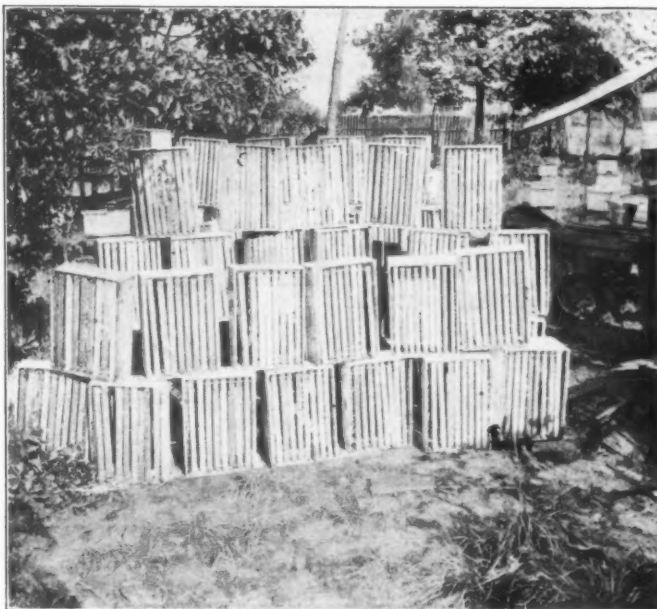
It would not be advisable to plant anything for your bees, for it would surely fail during such a drouth. If it had not been so dry you would at least have had nectar enough coming in to prevent starvation. You acted wisely by feeding.

As soon as your bees start building up again, you might introduce some Italian queens, but not at present, for you may have some losses from the run down condition.

Cleaning Out Combs

The cut here shown illustrates how I have my combs cleaned of honey after extracting. These combs are placed back in the supers and then set out in the open at the edge of the apiary, just a few steps from the extracting room. They are set on ends, so if it rains the water will not fill the combs. During a sultry day the bees will not make much headway cleaning them because the adhering honey is very thick and gummy, but during the night the damp cool atmosphere will soften it and it is all quickly removed by the bees next morning.

I have practiced this for years, and no trouble by robbing has ever occurred, although there are over 100



WILDER'S METHOD OF CLEANING UP COMBS.

colonies in this yard, and sometimes a number of weak ones. This keeps them busy, and they never "nose" or bother about the extracting house, the doors of which are sometimes left open for an hour or more. They seem not to see or think of anything except these supers. They never tear down any comb in these supers.

This picture was taken early one morning, just after they had left them. No bees are around them, and a team is driven right up to them and they are loaded on. This might appear as a bad practice and dangerous to undertake on account of robbing, etc. I don't think it would be if they were started early in the spring while the honey

flow was yet on, and kept up until all extracting was done. It is surely not any more dangerous than giving the wet combs back to the bees directly. This is certainly convenient, and if the supers set out several days, there will be but little danger from the moth.

While I am on this subject let me say that as I was looking over one of my apiaries with my apiarist, I found a frame of comb left out leaning beside a hive, and it contained considerable honey. I asked him how that happened, and he said he overlooked it while manipulating frames, but, said I, "Why didn't the robbers take to it?" He stated that on the week before he left a super of honey setting on end



J. J. WILDER'S MOUNTAIN HOME.

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out among the hives, which he overlooked while working in a great hurry, and that on his return five days later he found it and another frame of honey near by, and that it was unmolested by robbers. I also found that another one of my apiarists had raised the covers of the hives over one inch for ventilation, thus exposing honey, and it had not induced robbing. I thought this remarkable and worth relating.

[It is well to tell the beginners that such things happen only during a heavy harvest. Bees seem to prefer the nectar of flowers to honey already gathered.—EDITOR.]

Our Mountain Home

The cottage here shown is the writer's summer home at Mountain City, Ga., located on the edge of the Blue Ridge Mountains. It is here I expect to spend the remaining summers of my life.

We have a natural gap through the mountains known as Roburn Gap, through which runs a railroad. The mountain views from the slow going train are perhaps not excelled anywhere. The fresh pure, cool mountain air is always circulating, making the summer climate ideal, the thermometer registering close to 90 degrees all the time. The pure cool mountain spring water is abundant everywhere. Delicious fruits of almost all kinds are plentiful. Just at the rear of my cottage I have a small orchard which supplies us with fruit, and at the rear of this rolls up Massingale Mountain to a height of about 4000 feet. It has a bald peak where the writer spends many pleasant hours enjoying the surrounding mountain and valley scenery.

Apiary Work

It is not the time of the season yet to slack up on apiary work, but if it has been well kept up from early spring a week's vacation could be taken and enjoyed. We have not ceased apiary work, such as requeening, making increase, building up the weaker colonies, and getting all ready for the summer flow. In fact, we have done this all along while taking off honey, and we have every colony in fine trim for the flow, which is now on.

If other beekeepers have not done this they should do it at once, in order to harvest some honey at the end of the summer flow and be prepared for the fall flow, and get in good condition for winter. In the great cotton belt supers should be cleaned and prepared, using full sheets of foundation in frames or sections.

The Crop and Market

As a whole the spring crop of honey has been about an average in Dixie, and naturally the market is a little dull at this time. Many beekeepers have still considerable honey on hand unsold, and are offering it a few cents below the usual price. This is a mistake, for it does not increase the sales, and

a little later, when the market is more open, it will move at the regular prices.

There is no use to lower prices when the market is dull. Let the supply move some and you will get your price.

There has been a large crop of honey gathered in the mountain sections. This is the cause of the dullness of the market. This home supply will soon be gone.

CANADIAN



BEEDOM~

Conducted by J. L. BYER, Mt. Joy, Ontario.

Prospects Not the Best

July 13, and hardly a pound of clover honey in the supers, and the clover is through blooming for the season. Briefly, this sums up the situation in this section, and from reports received from other localities, I fear things are not much better in many places in the province. Basswood may yield some honey in some localities, but as it is not open yet no definite information will be available for 10 days at least. We look for none from that source here in York county, owing to scarcity of trees, and from the fact that not half of the trees we have are going to bloom this year. At the north yard the prospects for basswood are fair, and we are hoping that some nectar will come from the bloom, so that we will at least have some white honey.

At opening of clover bloom the hives were heavy with honey gathered from hard maple, many colonies having from 10 to 25 pounds of this honey in the supers. If the hives were all weighed today, I doubt if they would average as heavy as they did a month ago, even if not a pound of this early honey was extracted. This will give the readers an idea as to what a dearth of nectar we have had. There was not a day during clover bloom that one could open hives for any length of time without robbers nosing around. Prospects are on an average for a buckwheat flow, provided we get some showers, but at the best in our locality we expect little more than enough for winter stores.

The failure of the clover crop naturally hits the man hard who is depending upon bees alone for a living, and in seasons like this the man so situated wishes he had a few acres of garden truck to put his time in, and incidentally bring enough money to pay expenses, but in seasons like last year he would not be able to attend to any other kind of work, and with labor hard to secure, it is quite a problem as to just what course to take. One thing is sure, the men who have more than one string to their bow will, this season at least, have reason to be thankful.

While things look blue just at present for the specialist beekeeper, we should not forget the business is an uncertain one, and seasons like the present have occurred before and will come again. One redeeming feature of the present situation is that many who have seen visions of "easy money" in beekeeping will now know by actual experience, which is a better teacher than rosy pictures of the busi-

ness, that there are two sides to the question, and even if in some years the colonies do yield comparatively large returns for capital invested, seasons like the present help to materially pull down the average of profits.

In many parts of Ontario people have gone "bee crazy," and the sale of beekeepers' supplies has reached enormous proportions. If conditions are at all general over Ontario, as I have reason to believe, I venture to say that 75 percent of the foundation, hives, etc., that have been purchased have not been used, and will be carried over until another year.

Rearing Queens and Requeening

Having little to do in the line of work that comes along with the honey flow, my intentions were to try and rear a few queens for home use. But the weather has been so changeable, and the dearth of nectar so pronounced, that nothing has been done at this date (July 13). With the bees dragging out the drones, prospects for queen-rearing are not very good to the novice in the business, and I feel like waiting until buckwheat starts to bloom, hoping that it will do enough better than the clover to allow one to work in comfort among the bees.

During buckwheat bloom is a splendid time to do requeening, no matter if you buy or rear your queens, and any failing queens, or queens old enough to be likely to fail next spring, should at this time be superseded, if not earlier in the season.

Odor of American Foulbrood

After reading what E. G. Carr has to say about the odor of the two kinds of foulbrood, page 236 of the American Bee Journal for July, I think his olfactory nerves are all right. Certainly I found, as he says, that in well developed cases of European foulbrood one could smell the characteristic odor some distance from the hives, and only once can I recollect anything like that with American foulbrood. In that particular instance, a whole apiary of about 60 colonies was simply rotten with American foulbrood, the owner having ignorantly spread brood from diseased colonies into others early in the season. The glue pot odor could be smelled any place in the yard if on the windward side, but that is the only time I can recollect anything like it. Unquestionably, in Ontario at least, European foulbrood has a decidedly nasty odor.

American Bee Journal

The good point made by Mr. Carr is mentioning that larvæ dying from American foulbrood almost invariably lie on the lower cell wall, while those dying from European foulbrood are in any shape. It is one of the real differences between the two diseases. The sure test for American foulbrood is the ropiness of the dead larvæ. When the ropiness is pronounced, you can safely diagnose it as a case of American foulbrood.

Toronto Beekeepers' President

It is my pleasure to know Mr. Chapman, president of the Toronto Beekeepers' Association, and I would endorse what Secretary Hopper says about him. One thing Mr. Hopper has not mentioned, and this omission has something to do in explaining the good meetings, good order at such meetings, etc. While Mr. Chapman is a first-rate beekeeper, this calling is a side line with him, as he is police inspector of the city of Toronto. See the point? The members just have to be good, or else Mr. Chapman would trot them all off to the police court.

Protecting Supers in a Dull Season

Last year at this time it was a problem to get enough supers to accommodate the bees, as the good flow of nectar gave little time to do any extracting. This year it is a problem to care for the supers so that moths do not achieve their destructive work. Many of our super combs have pollen in them, and while little evidence of the moth has appeared yet, one has to be careful to guard against the pests, and it is surprising how much damage can be done in a short time when once they get started.

If one has fairly tight boxes in which to store the combs, prevention is very easy. A small quantity of carbon bisulphide will destroy eggs and larvæ if already present, and as long as there is any odor of the drug among the combs no moth will venture in, even if the box is open enough to admit them. Of course, one can pile up the supers over the colonies, but when expecting a light flow of only a super or two at the most, as we do from buckwheat, it is a nuisance to have an over abundance of room for the bees. But no matter what course you pursue, do not allow the moths to destroy the combs, as ready drawn combs are as good as cash to the beekeeper, and even if not used this year, will likely be handy at some future time.

Advertising Honey

What you say, Mr. Editor, on page 226 regarding the matter of advertising honey is interesting reading. The conversation you had with the gentleman in the diner, and the examples he gives by way of illustrating the value of advertising, emphasize what many of us have claimed. "Postum" and "Spearment Gum" which he mentions, are articles of which the selling price is very much more than the cost of production. That is the difficulty we

are up against. If an article costs us 2 cents, and we could by advertising sell it for 25 cents, what a fund we could put in for advertising.

I believe that honey can be advertised profitably, but never as profitably as "Spearment Gum" or "Postum."

By the way, is that not a mistake in figures when \$2000 is mentioned as the annual expenditure for advertising "Postum"? I had been led to believe that one or two ciphers should be added to that figure, and I expect the latter sum would be nearer the mark.



CHARACTERISTIC SOUTHERN CALIFORNIA SCENERY—SAGES IN THE FOREGROUND.

CALIFORNIA BEE-KEEPING

Conducted by J. E. PLEASANTS, Orange, Calif.

Honey Crop Small, But Excellent

The season, which has been most uncertain, is now sufficiently advanced to give an idea of the crop. A conservative estimate from many different sources gives the honey product slightly under a half crop. We have alternated between failure and success so long that it has been a very difficult season to report. There have been times when the outlook was flattering. Then there would be an abrupt change in the weather and for a time we would think we were in for a total failure. Then things would look up again.

The condition of apiaries in different localities has been variable, excellent reports from some and very discouraging news from others. The press, getting some reports from those who were doing well and were of course optimistic, published glowing accounts of a great harvest. We are great on that sort of thing in southern California. But it sometimes does harm, and in this case these reports and those of others who should know better have done much to weaken prices. I refer to the exaggerated editorials of the Western Honey Bee. This our only bee journal in California, is now edited by a man who it would appear

is more interested on the side of the buyer than the producer. It is certainly not pleasing the beekeepers at large. The Executive Board of the State Association has made a grave mistake in their selection this time.

Our crop is small, our honey is of excellent quality, white and water-white, of a heavy body predominate, and the highest prices buyers are quoting to us so far are 6 cents for water-white, 5½ for white, and 5 for amber. So far I have heard of but few sales, and I believe all the large apiarists will hold their honey until prices advance.

Mr. M. H. Mendelson, our leading beekeeper, in answer to an inquiry about the crop, June 22, says: "The season has been a disappointment. Only about one-fourth crop with me. (Ventura Co., Calif.) The weather has been unusually cool. It is an off year. At the coast it is almost a failure."

Some other localities report some better. My county (Orange) has slightly under a half crop.

Quantity and Quality of Eucalyptus Honey

In reply to question regarding the quantity and quality of eucalyptus honey, I will quote Mr. Roy K. Bishop,

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Horticultural Commissioner for Orange Co., Calif., who is also a beekeeper of experience. He reports on four species only—*E. globulus*, our common blue gum (very useful for fuel), *E. robusta*, *E. corynocalyx*, sugar gum, and *E. rastrata*, red gum. He says: "All four varieties are heavy nectar producers. Probably blue gum and *robusta* are the best. These come in the fall and winter, so that bees are much benefited in stimulating early breeding. The honey is poor for table use, dark and of rank flavor. There may be others that would produce a good grade of honey, but all we have here of any quantity are not the proper varieties."

Mr. Bishop does not think it profitable to plant eucalyptus for honey alone, but that the trees are of much value for many other purposes and the honey yield would be a clear gain. My idea also is that, as they are of great value as shade trees, for fuel, wind-

breaks, fence posts, etc., and many species very ornamental, they would be a distinct asset on our mountain bee ranches, and would be both useful and ornamental to cover much waste land. Also, we should try more of the different species.

Some years ago an Australian beekeeper visited our section. He said the species called there "yellow box" was their main source of honey supply, and that the honey was good. There is some confusion of names here among the writers of eucalyptus, so it is very hard to be sure of some species. Prof. McClatchin, whose work is good, speaks of a "yellow box" as *E. melliodora*, or the honey-scented gum. I have four species which are all heavy nectar producers on dry land—blue gum, sugar gum, a species of iron bark and the *leucosylon rosea*. The last is a decidedly ornamental tree with rose-colored blossoms.

breeding apiaries or mating stations located where bees are scarce. It is said that the breeders of Rassenzucht depend upon a 2 kilometer isolation. This is altogether too little. Mr. Theiler acknowledged to me that drones can and do easily travel 4 kilometers, aside of the distance the queen may span herself. Their largest breeding apiary produced 224 queens in the season.

I gained but little faith in the Rassenzucht, for not only they show a less average of yield than in western Switzerland, but bees of this selection, carried into the Canton of Neuchâtel, side by side with the Italian hybrids of that region, showed no superiority in the surplus yield, according to statements made to me by reliable men. However, the lower average crop of German Swiss beekeepers may be ascribed to the exiguity of their hives, which cannot be enlarged, either in the brood-chamber or in the super, beyond the size of the original receptacles. To secure a large crop of honey it becomes necessary to remove sections or extracting frames as fast as filled. None of our beekeepers would consider this practical. A house apiary, to become thoroughly serviceable, should permit the storifying of hives, to at least their normal capacity. This assertion may not be appreciated by those of our European friends who do not use expandable hives, but it is nevertheless based upon long experience.

I do not wish to be understood as condemning the Rassenzucht, for it is in the line of progress. But it will take the selection of many successive generations of the best honey-producing bees to reach a positive result. But most beekeepers, even among the critics of the German enthusiasts, recognize that, sooner or later, a wise selection will bring visible improvement.

Mr. Theiler gave me a suggestion, on the May disease, which may be worth enquiring into. He attributes it to the consumption by the adult bees of an excess of pollen and perhaps moldy or unhealthy pollen. Some day, some one will ascertain the exact cause.

Mr. Theiler mentioned 2330 meters (about 7700 feet) as the highest altitude at which bees were known to gather honey. This agreed with similar remarks made by Mr. Gubler and others. I wonder how this would compare with the honey-producing altitudes of the United States? Many of the best honey-yielding plains of Colorado and mountain States are above 5000 feet. But how far up do bees produce honey in amounts worthy of note? I was also told that the honey of high altitudes was finer, whiter, and of better flavor than from the plains, even when from the same kind of blossoms. Is this correct?

The bee-museum is very interesting. I saw there a vast amount of bee-literature, though, of course, mainly in German. The oldest was a book of Johannes Coleri, dated 1611, comprising agriculture and horticulture with bee-culture. There was a translation of Virgil into German, made in 1724.

Numerous samples of wax scales as produced by the bees were in the exhibit. All were white, and Mr. Theiler



SAGES AND OTHER HONEY PLANTS ABOUND IN THE FOOTHILLS.

NOTES FROM ABROAD

BY C. P. DADANT.

Zug, on the lake of the same name, a few miles north of the famous Rigi, is one of the prettiest cities in Switzerland. An unpleasant occurrence happened there in 1887. A part of its quay or wharf sunk into the lake, with a number of buildings. An inscription on the lake shore commemorates the unfortunate event.

In the descriptions furnished by the tourist guides, we find the following: "At Rosenberg, 15 minutes from the city, on the east slope, is a noted museum of apiculture."

An old beekeeper living at Mettmen-

stetten, who is also a cutler, Mr. Huber to whom we had been recommended by our Langres friend, Mr. Beligné, came to meet us at Zug, and with him we called upon Dr. Theiler, who keeps the museum above mentioned. He has some 40 colonies of bees, all in Burki-Jecker hives, arranged in his bee-house like so many doors to a closet. Here I found the first of the famous Rassenzucht or race selection of German Switzerland. Three or four different races were shown me. The selection is simply a production segregation made by breeding drones and queens from select colonies of native bees in

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confirmed my opinion that wax scales, when first exuded from the abdomen of the bee, are always of a pearly whiteness, which readily changes by contact with other objects, especially pollen dust.

I saw wax works and wax paintings of the very highest finish; among others portraits of Aristotle and Socrates in relief wax. I there found also that the patron saint of beekeepers is Saint Ambrose, bishop of Milan in 340 A. D. An interesting statement for lovers of antiquities!

From the Rosenberg one has a magnificent view. The little city of Zug is under your feet, the lake beyond, the mountains in the distance on all sides as well as behind. It is an orchard country, and the trees, hundreds of years old, are of great size.

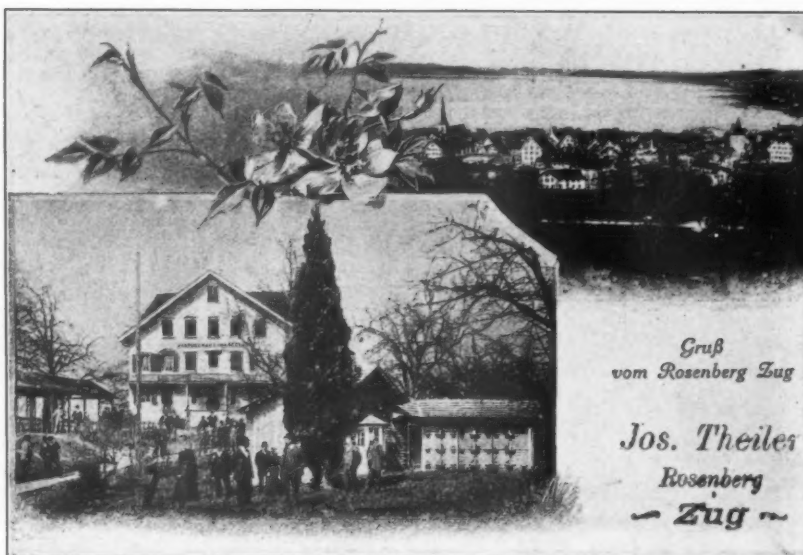
Our next visit, on the afternoon of the same day, was to Dr. Brunnich, our interesting contributor, a most capable microscopist. He speaks French and German with almost equal ease. He also speaks and writes English. His home is at Oberwil, a mile or two south of the city. It is reached by boat on the Lake of Zug, but we walked across the meadows and orchards from the Rosenberg.

Instead of smoke, Dr. Brunnich used a gentle water spray over the bees. It appeared to be as efficient as smoke, and he holds that it is preferable.

I saw a number of interesting things in his apiary. First of all is his method of marking the queens, described by him at the request of our subscribers on page 200 of our June number. A very small spot is dropped on the corslet, where it dries instantly. The queen is marked either right or left or on the center as may be desired. This little red spot is quickly seen, when the comb is raised, and helps wonderfully in finding her. I take pride in being able to find queens as readily as any one. But with this method of marking, there is no need of great practice. Dr. Brunnich says that in many instances people are deceived in the results of a queen introduction because the queen introduced has not been sufficiently marked. With this method there is little room, if any, for error.

Mr. Brunnich has tried the experiment made by others as well as by myself of giving a natural swarm a hive entirely filled with drone-comb, to ascertain whether bees would change or rebuild the comb. The only thing they did was to narrow down the mouth of the cells to worker size, when the queen proceeded to lay worker eggs in them. This result has thus far been universal in a trial of this kind. It positively disproves the assertion that bees do tear down one kind of comb to rebuild it in another. The only instances of this have been where the comb was moldy or in some manner damaged.

But the most interesting part of Dr. Brunnich's entertainment was his microscopical work. I was very sorry to be only a novice in microscopic studies. But I saw enough to perceive that his work is of the most accurate character. His explanation and exhibit of the salivary glands by magnified photographs were most interesting. There has long been a difference of



*Grüß
vom Rosenberg Zug*

*Jos. Theiler
Rosenberg
— Zug —*

opinion among entomologists upon the production of the pap or royal jelly which is fed to queens during both their larval and insect life, and to the workers in the early larval stages. Cheshire, after Schiemenz and Leuckart, held that it is produced by a pair of salivary glands which exist in the worker bee and not in the queen and drone. Others hold the view that this pap is produced by the chyle stomach of the worker bees and is properly chyle food. Dr. Brunnich has tried feeding the nurse bees with honey colored with lamp black, and the larval pap produced by those bees was entirely devoid of any dark color. He deduces, from that, that the larval food is not a production of the chyle stomach.

It was our intention to go to Mettmensstetten the same evening, to the home of Mr. Huber, who had invited us beforehand and had kindly accompanied us on this Zug visit. We, therefore, left the Brunnich home after bidding adieu to the Doctor and his pleas-

ant family, with an invitation to visit us in America. In less than half an hour we were at Mettmensstetten, where we spent the following day.

Mr. Huber, who is, as I said, a beekeeper and a cutler, is also a practical farmer. He was intent upon showing us the curiosities of this part of Switzerland, and announced to us that he would take us in his carriage to some grottoes 10 miles away. We were to start early in the morning. However, as they had but one horse and his son announced to me that they had just one more wagon load of hay to bring in, as the end of the hay harvest, I took it for granted that they must first haul in the hay. But the carriage was ready and at the door before we had finished our breakfast. I said: "What about your hay?" "Oh, they have gone after it long ago." "But I thought you had only one horse?" "We don't haul hay with the horse; we hitch up the cows." And sure enough, in came the load of hay with two fine cows pulling it up to the barn. During that day we saw not



HOME OF DR. BRUNNICH.

American Bee Journal



A VIEW OF ZUG.

only teams of cows drawing loads on the public road, but a single cow hitched to a wagon tongue intended for a team. We saw a bull and a horse hitched together and making a very fine team indeed. This was more interesting to us than all the grottoes. Everything is so pretty and neat, in those Swiss villages! Even the manure piles are squared and trimmed as if they had been built with a plumb and square. Apples, pears and plums are the principal crop. The fruit trees dot the fields in every direction, without any particular order, for they are hardly ever in rows. The pear crop is immense, and they make both apple cider and pear cider. The pomace is afterwards put into big casks or vats to ferment and make "schnapps" or apple-jack. Then in order that nothing be wasted, they press the cast-off pomace into round cakes that look like

6-inch sausages. These are put upon racks to dry in the sun and are used for fuel.

They have the finest cattle in the world, large brown cows, that are kept in the barn and curried daily. The wages of a cow-boy are \$2.00 per week and board. The young cattle and those of the cows that do not give milk are sent to the mountains for the summer. Nothing is wasted, and every inch of tillable ground is used. But what beautiful roads, and what a pleasure it is to travel upon them! We spent an entire day traveling through the country with our hospitable friend.

I proposed to take you as far as Zurich on this trip, but I have exceeded the limits and must put it off until next month. We took our leave of Mr. Huber, his son and his pretty daughters, and reached Zurich on the evening of Aug. 23.

CONVENTION



PROCEEDINGS

The Iowa Field Meet at Delmar

Some 70 persons gathered at the Coverdale farm, near Delmar, on the morning of July 7. The automobile, which is becoming a farmer's vehicle, renders such meetings much more successful than formerly. There were about ten of these gathered in the yard by 11 o'clock a.m. I had myself arrived by rail at Maquoketa, 10 miles away, the previous evening, and through the kindness of Mr. and Mrs. Gallagher, with their son Clinton as chauffeur, I had a fine ride from Maquoketa through the rich Iowa rolling plains to the place of meeting and back again. A plentiful supply of moisture had made the landscape particularly attractive, for everything was green except the harvested wheat.

Mr. Coverdale is a large farmer as

well as an extensive beekeeper. He is one of the champions of the long ill-judged sweet clover. He considers it as the most profitable of all legumes, and his horses, hogs and cattle grow fat upon it. The accompanying picture of four clover leaves shows his preferred variety of sweet clover, which is lighter in the stalk and in the leaves than the ordinary highway sweet clover. He asserts that it is also less bitter. But there is little doubt that all hay-consuming domestic animals may be readily trained to like sweet clover.

As a supporting testimony to his own experience, Mr. Coverdale gave his hearers some quotations from an article in the *Prairie Farmer* of July 1. We reproduce the main passages of this. It is an account of the visit of over 100 Illinois farmers to the sweet clover

farm of W. P. Graham, of Rochelle:

"Mr. Graham owns several farms, and the combined acreage of sweet clover on all of them totals about 500 acres. Although born and reared a country boy, Mr. Graham is one of those who returned to the soil upon finding that town life was shortening their days too rapidly. As he was about to embark in the farming business he became interested in Dr. Hopkins, methods of improving run-down land, and as that was the kind of land he had to deal with, he set the Doctor's theories to work. He also set one of his own ideas to work, that of employing the rankest sweet clover, instead of some of the smaller legumes, to turn under for organic matter and nitrogen. By its judicious use in carefully arranged rotations, Mr. Graham has materially increased the productiveness of his land. Seeing his results, a number of his neighbors who laughed at 'Graham's weeds' a few years ago, have now come to grow sweet clover as a matter of course.

"Mr. Graham sows his sweet clover with oats, barley, and winter or spring wheat. A drill with seeder attachment is used, the sweet clover being sown directly in the rows with the grain. In this manner 15 pounds of sweet clover seed per acre was included with some wheat sown last spring, and the stand seemed all that could be desired. Sweet clover was originally put to use as a soil improver on this farm, and in telling his experience with it, Mr. Graham advised farmers who engaged in building up worn-out soils to first apply limestone so as to grow clover and turn the leguminous crop under and to apply the phosphorus when one finds that it is necessary for larger crops; but first of all get an abundance of organic matter into the soil.

"In addition to being a soil improver sweet clover is Mr. Graham's trump card in the beef producing game. In summer it is pastured and it is made into silage for winter feeding. At the time of this visit 63 head of cattle had been feeding on a 40-acre field of sweet clover since April 19, and it was being cut June 10, because it had grown faster than the animals could eat it down. It was yielding at this cutting at the rate of about three-fourths of a ton per acre. This field was sown a year ago last spring with barley. It made growth 18 inches tall by Sept. 7, and was pastured 55 days, or until Nov. 1, 1913. During this 55 days 29 feeders weighing about 870 pounds at the beginning, grazed on this pasture and gained an average of 154 pounds apiece, or nearly 3 pounds per day. Besides the pasture these cattle had only salt and water and what straw they consumed from having access to a straw stack. Twenty-eight of these steers from Dec. 11 to Jan. 11 also made an average gain of 91 pounds per head on sweet clover silage, and 215 pounds of ground ear corn for the lot per day.

"I wouldn't have missed that trip for a hundred dollars," said one of the Livingston county farmers as he left Rochelle on the return trip."

Mr. Coverdale has been a grower of sweet clover for 17 years. He found that it will grow where alfalfa turned yellow and died. But in order to secure

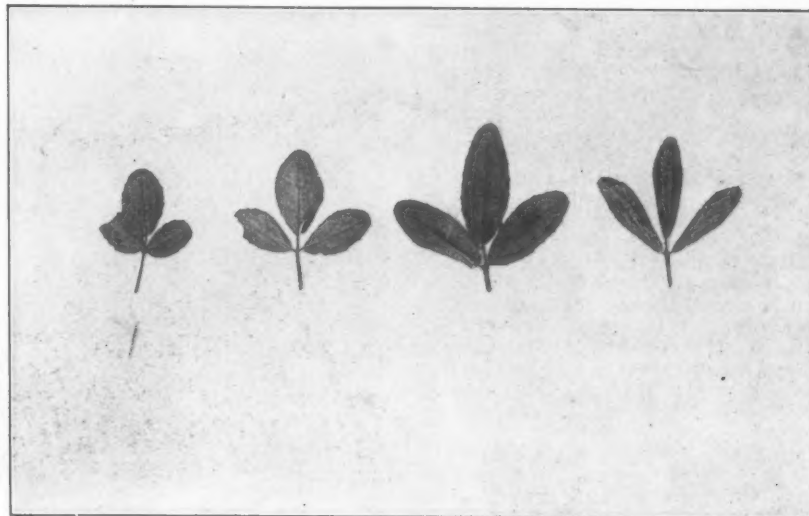
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the best results, it is necessary to use about two tons of crushed limestone per acre on all acid lands. In addition to its great value as a soil restorer through the great quantity of nitrogen stored in the nodules of its roots, exceeding that of any other legume crop, in addition also to its invaluable features as a honey producer, sweet clover has proven to him one of the most valuable plants for stock. As much as three cuttings are made during the second summer of its growth. One crop may be secured before gathering a seed crop. For the latter, the crop is harvested with a binder and the clover thrashed in similar manner to the thrashing of red clover.

An excellent dinner, profusely served at the handsome home, was offered to all visitors from away, by Mrs. Coverdale and her daughters. Mrs. Coverdale is as much of a beekeeper as her husband, and has often put the supers, alone, on an entire apiary. They are active, wide-awake, thrifty farmers and beekeepers.

A sudden shower, late in the afternoon, put an abrupt end to the meeting. Luckily, it was not sufficient to impede the travel of automobiles, and the crowd was soon scattered far and wide over the rich rolling hills, hoping soon to meet again.

Several leading beekeepers were present at this meet. Among them I will mention Messrs. Pellett and Snyder, president and secretary of the Iowa Beekeepers' Association, Prof.



NO. 1. YELLOW SWEET CLOVER (*Melilotus officinalis*). NO. 2. *M. alba*, TALL, SLENDER, COVERDALE'S CHOICE. NO. 3. *M. alba*, HIGHWAY, MORE BITTER. NO. 4. ALFALFA.

Bartholomew, of Ames, and Mr. L. A. Syverud, of Canton, S. Dak.

But a very interesting subject remains for me to treat. That is the account of my visit at the Gallagher home and apiary during my stay at Maquoketa. Mr. Gallagher is a splendid beekeeper. I will speak of this in a separate article soon.—C. P. DADANT.

while the honey was as fine white clover as he ever handled, the cans were dusty and rusty. He also said he could tell what kind of bees the producers of this honey were. This honey also contained flies and soil, consequently this depreciated the selling price, whereas if it had been strained and the cans clean the honey would have been all right. This producer was not dishonest, but careless.

I would like to tell what happened in our place of business as regards dishonesty. Mr. Leahy, of Higginsville, Mo., came in one day and asked if we had any beeswax. I told him that we had just received two nice large cakes, about 100 pounds. We agreed on the price. He then said, "I have never done any business with your house; you can ship the beeswax C. O. D. or I will remit you." I told him he could remit, as I had never yet, in all my dealings, run across a dishonest bee-man. In getting this wax ready for shipment, we had to cut one of the

CONTRIBUTED ARTICLES~



Handling Honey

BY C. C. CLEMONS,

A COMMISSION MERCHANT.

(Read before the Missouri State Beekeepers' Association.)

WHAT I do not know about bees would make a very large book, for all bees look alike to me. However, I cannot say the same for honey. I have seen a great many different kinds of honey. Honey, as a food, is one of the most wholesome of all sweets. It is also one of the most delicious. There is no preparation made or put up by man that can compare with the product of the bee. Therefore, it is up to the producers to keep up the high appreciation that the consumers of this wholesome and delicious sweet now have by being cleanly and sanitary in preparing it for the market.

We all know that the bee-business requires about as much brains and study as any other branch of industry, necessitating not only talent but care and attention, and every man in the business ought to have pride enough to take the best care of his bees; also prepare the product so that it will bring the top market price.

Extracted honey should be strained,

if necessary, and put up in new 5-gallon cans. If second-hand cans are used, see that they are absolutely clean. One of the members, who is present, told me he bought some extracted honey put up in second-hand cans, and



FED ON SWEET CLOVER.

American Bee Journal

cakes open, and, behold! we found a 10-pound stone in the first cake, and in cutting into the other cake we found the same thing. I began to lose faith in bee-men. I wrote the gentleman, from whom we got the wax, and he came to see me. He said he had bought the wax from two peddlers late one evening. He paid for the two stones and my faith was restored.

Well, now, a little more about honey. Until lately we have always been unfavorable to more than two grades of comb honey, No. 1 and No. 2, but this fall we have had two cars of comb honey from Colorado graded under the new rules of the Colorado State Beekeepers' Association, and we were well pleased with the grading. These two cars were certainly graded according to rules.

A great trouble with some beekeepers is they do not or will not comply closely with the grading rules. We also approve of the manner in which the two cars, just mentioned, were marked, as each grade is easily distinguished from the others. Each grade is marked with a letter. For instance, fancy was marked with a "C," No. 1 with an "H," and No. 2 with a "P." Of course, any letter of the alphabet could be used, the object of changing the marking of the cases to letters being very obvious.

For instance, a producer often has a



BROOD SOWS GRAZING ON A SWEET CLOVER PASTURE—FARM OF FRANK COVERDALE.
(Courtesy of Dakota Farmer.)

quantity of honey slightly travel stained but of good weight, hardly of good enough quality to grade No. 1, but certainly worth more than the price prevailing at that time for the No. 2 grade. He cannot, conscientiously, pack and grade this lot No. 1, and certainly if he calls it No. 2 he will have to take the lower grade price. Therefore, by mark-

ing the cases with a letter the lot could be sold strictly on its merits without misrepresentation by either the shipper or commission man, and without the purchaser feeling that he was paying too high a price for off grades. The cases marked by a letter can be sold with the understanding that the letter either represents a grade, either



THE BEE MEN IN THE COVERDALE APIARY.

American Bee Journal

No. 1 or No. 2. or that it was the mark used by an individual shipper. We would recommend, however, that standard grading rules be adhered to as closely as possible.

The 24-section case is about the only case that is now being used, either single or double deck, the 12, 18, and 28 section cases being out of date.

As to sections, we have been asked the question, "Which are the most favorable with dealers, 4x5 or 4¼x4¼ sections?" We find some difference in opinions, but not enough to speak of. We do not think it makes any difference with the consumer, if the honey is clean and good weight. They say "Cleanliness is next to Godliness," so the next thing to grading is cleanliness. What looks nicer than a nice, white, clean case of sections and clean honey? Buyers always give this kind of package the preference.

Always nail the cases securely, but use small nails so that the top may be taken off without splitting it. Buyers generally want the top removed so they may see if the sections run uniform as to quality, and in making local shipments I think you all know it is very important that you crate your cases.

Another important thing to remember is, do not fail to use separators, and be careful not to separate so closely that your sections will not weigh over 10 or 12 ounces.

Kansas City, Mo.

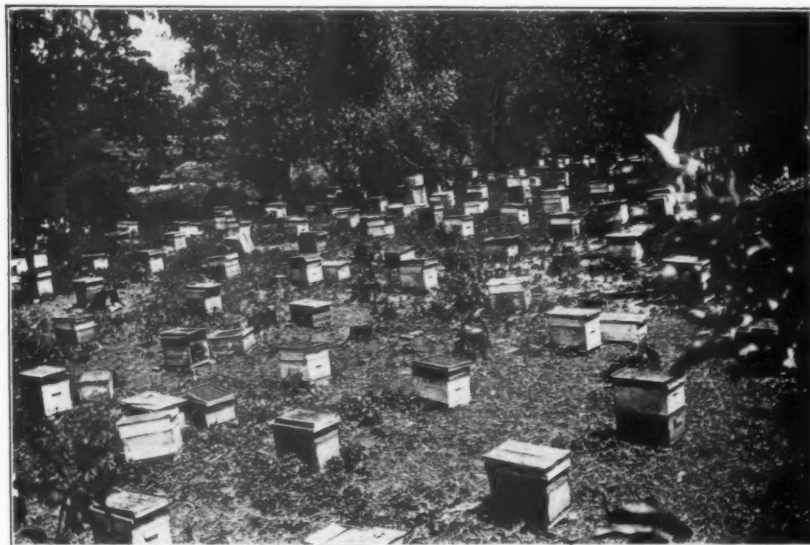
Colony Odor of Bees

BY ARTHUR C. MILLER.

MR. EDITOR:—In your foot-note to Mr. Hastings' article on page 237, July, 1914, you imply that I am one of a very few who doubt the existence of colony odor. If that is what you intended, I beg leave to correct you. If we may judge by analogy it is very probable that each colony does possess an individual odor peculiar to itself. Also, if we judge by behavior of the bees under sundry conditions, they are guided by some unseen or unseeable factor which is best explained by ascribing it to odor. Such supposition is strengthened by a knowledge of the bees' acute sense of smell for some things.

With such foundation for belief in the existence of individual colony odor, there has been built up little by little a hypothesis as to the individual bee's possession and retention of such odor and sundry practices of bee-culture have been based on such supposition. I contend that facts do not warrant the belief in the retention by the individual bee of its colony odor after a greater or lesser absence from the colony. Or if we grant the possession of such odor, I contend that it plays a minor part in the bees' reception among strangers. Furthermore, we have no proof or assurance that a bee confined for a time in an alien colony acquires the odor of that colony.

Even though such things are almost universally believed by beekeepers does not make them so. Once everybody believed the world was flat (and some do now), but it is not so. Once all beekeepers believed in a "king bee," but we know differently now. Once



THE COVERDALE APIARY.

all beekeepers believed that bees arose from putrid meat, that wax was gathered from flowers, that bees stored honey in the cells with the tongue, that nectar was evaporated and ripened by exposure on the tongue, that a tongue extended toward a queen or other bee was offering or giving food, that pollen was rammed into cells with the bees' head, all of which we now know is not so. And there are sundry other things commonly believed which are known to those who have investigated to be not so.

As far as I am personally concerned it would be to my advantage to have the beekeepers believe as many erroneous things as possible, and base many laborious and costly practices thereon, for it would make it so much easier for me to compete with them and to make my business greater and more profitable than theirs. But in the long run it would not help me. Ignorance is a drag on the whole na-

tion, and though I might profit today by not helping others, tomorrow my children might be losers by the ignorance of some of their fellowmen. So after all it is really selfishness which seems to be the motive for my contentions.

Concerning Mr. Hastings' doubt of my observations, all I can say is that judging by his article his observations have not been extensive enough. While at one time colonies resent the intrusion of any strangers, at another time any bee may enter anywhere. One day we may unite bees in any way we choose and the next day it takes all the skill we have. Under many conditions we may give queens to alien bees without any precautions whatever, and another day we must use much care.

Until beekeepers will lay aside their prejudices, and will weigh each observed fact, it is almost useless to cite sundry examples where bees behave as if recognizing an odor, and the equally



SWEET CLOVER JUST BEFORE BLOOM.

American Bee Journal

numerous times when their behavior suggests either the absence of any odor or their complete ignoring of it.

To avoid misunderstanding, let me repeat that I believe each colony probably does have its individual odor (there are exceptions), and that it is possible that each bee thereof may possess and retain for a time such colony odor, but what I do most positively assert is that such odors do not play anything like the important part in practical bee-culture which has been given to them, and that beekeepers are blind to their own best interests when they fail to lay aside prejudice and blind belief and weigh fact against fact.

In conclusion, let me say that when believing in the importance of odor as a factor in bee behavior, and basing my practices thereon, I had as much labor and as many troubles as the rest in carrying out the ordinary routine of bee-culture. Since relegating odor to the background and proceeding along independent lines, I have accomplished much that is ordinarily considered impracticable and have materially lessened the labor.

Providence, R. I.

Isle of Wight Disease

BY GEO. W. JUDGE.

NOTICE that the so-called "Isle of Wight Disease" (microsporidiosis) which has made such havoc among the bee population in this country, is engaging the attention of the American bee papers of late. I do not think it is generally realized in America what a menace this disease is to the industry. In Great Britain, during the last few years, it has spread rapidly all over the country, and today there are very few districts indeed that have not been visited by it. In many localities every colony has been destroyed; in fact, in the comparatively small area of north-west Kent (in which I reside) there is not 5 percent of the colonies alive today, that were in perfect condition three years ago.

The causative agent (*Nosema apis*) is

very destructive to bee life, and it is to be hoped that every effort will be taken to prevent the introduction of the disease to America.

I take this opportunity to enclose one of my photographs of the remains of a colony that had been destroyed by this disease. It shows a comb taken from a diseased hive with the queen among the small cluster of dead bees.

It is one of the characteristics of this disease that the queen is the last to survive, and from her position among the cluster of dead bees, it is pretty evident that her death was caused by chill, rather than from the effects of the disease.

This photograph is one of a set of original photographs recently exhibited at the Conversazione of the British Beekeepers' Association on this disease.

Barrowdene, Kent, England.

The Launch in Beekeeping

BY GRANT ANDERSON.

THE season of 1914 has been an unusual one. The heavy rains in winter started the honey plants to growing, but later the weather turned out dry and cool with fog on warm mornings. The bees built up slowly on heavy stores, and the result was we were a full month later getting our first honey out than we were last spring. Swarming has also been later and lighter. The honey is of fine quality and the demand very good. We have orders now for more than 10,000 pounds of honey. The season, while late, promises to be a good one; bountiful rains and warm sun will surely bring the bloom.

Our new baby yard that we started this spring has attracted considerable attention, located as it is on the very bank of the Arroyo, in sight of people passing in boats.

I enclose a photograph of our big launch Queen B, with a light load of bees. The young man in the boat is my baby boy 15 years old. My two boys are my only helpers in the out-apiaries. We have a house at our new baby apiary, where the boys live most

of the time and attend to the lower apiaries. Our launch, Annie Lee, will take the boys to any of the lower apiaries in a few minutes and carry a supply of hives and other fixtures for the bees.

As you will see, the Queen B is strictly a work boat. We planned and built this boat for this special purpose, and after using her for several months we are satisfied that it would be difficult to build a better one for the purpose. While the Queen B is a work boat, there are no boats on the Arroyo that can outrun her or run in as shallow water as she with the same load.

A good boat is the handiest thing for hauling honey. Some may think that lugging honey down and up hills to and from the boat would not be pleasant. We think so, too, but we don't do it. We have wire cables stretched from the top of the bank to the landings, and wheel our honey to the upper end of the cable, and there a grab is made for the purpose, grips the case, swings it up and rolls down the cable with it and a man in the boat lowers it. At the home landing we have a derrick with which to lift the honey out of the boat, swing it around on to a little platform which is suspended from another cable on which two rollers run, and the honey is run up the cable to the top of the bank and placed on the truck ready for the depot or honey house. This plan does away with most of the heavy lifting and saves time.

Our road is always good, rain or shine. Some one may want to know what I am doing while the boys look after the lower apiaries. Well, I happen to be busy most of the time. I have one honey yard and three queen yards to work besides transporting the hives and other supplies to the boys, shipping queens and honey and looking after the business generally. The cost of running the Queen B is less than the cost of feed for a team; it is less trouble and more satisfactory.

For moving bees there is nothing as good as a boat; we can move them with safety the hottest weather we have. We can move a good sized apiary at one trip.

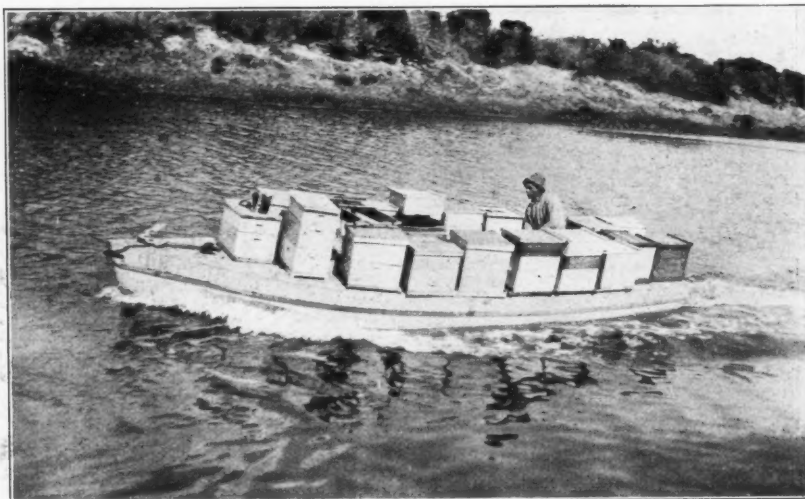
San Benito, Tex.

The Odor Theory

BY H. SPÜHLER.

IT was with a keen interest that I read the articles of Arthur C. Miller and of Dr. Brunnich upon the introduction of queens and the odor theory.

Without doubt the Miller method of introduction is excellent as concerns its simplicity and the results obtained. But I am astonished as to his view point concerning the role of odor in the domestic economy of the hive. In his last article Mr. Miller says: "I admit that each colony may have its individual odor, but I deny that a bee, after a long foraging trip, will retain enough of it to affect her reception by an alien colony. On the contrary, every observation indicates that it is wholly the individual bee's behavior which governs her reception." To prove this he cites the fact that field workers, returning loaded from the field, are accepted everywhere, and



GRANT ANDERSON'S LAUNCH LOADED WITH BEES.

American Bee Journal

that in addition one can find Italian bees in colonies of black bees as soon as this race has been introduced in an apiary.

To solve the question of odor we must remember that all the faculties of the bees are intended primarily for the conservation of the race. If our theory is well founded, the odor must serve this purpose, and the bees must recognize each other by their individual colony odor. I have often made the experiment that chilled bees gathered up and placed at the entrance of a hive are driven away, and even carried away, by the bees of that hive. If, on the other hand, during a honey flow, some laden workers go astray into the wrong hive, they are readily accepted. This is easily understood. In a time of abundance, no one is afraid of thieves, and there is very much less guarding than in a dearth. Besides, the colonies of an apiary visiting the same kinds of bloom, it brings the bees' odor nearer together. Then, too, bees like men, are unlikely to drive away those who bring them something. In a dearth, the conditions are entirely different, every strange bee, even a young bee, is mercilessly driven away; the struggle for existence demands it.

It is true that robbers are easily recognized even by their behavior, their guilty actions betray them. But the control of strangers is made more by

odor than by sight. The Italian bees mix readily with the blacks, but the inverse rarely happens. They usually refuse to accept of common bees. This is difficult to explain.

Orphan bees are usually accepted everywhere, when they come as supplicants, fanning their wings and humbly asking for admittance. But if the apiarist tries to unite them forcibly, without necessary precautions, the greater number of them are killed. When the uniting is done upon nuclei, or normal colonies transported in the place of others the union is more likely to succeed owing to the reciprocal embarrassment although they evidently know the united bees to be strangers.

The fact cited by Mr. Miller, that drones have a free pass everywhere, brings forward another question, that of sex odor. He says: "Have not drones the odor of their own colony?" Unquestionably, but much stronger than the colony odor is the sex odor, and this is what protects the drones. At the time of swarming the entire colony is sexually excited. The worker bees are females, though imperfect, and at this time they evidently have to a certain degree an amorous sentiment for the males. It would be against the purposes of nature if the bees of a colony attacked strange drones, for the natural law favors the mating of the queen with a drone from another

hive, so as to avoid the noxious in breeding.

It must be understood that the sex odor of the queen is in no way inferior to that of the drone. Swarming time furnishes us with evidence of this, since matings take place between colonies 4 or 5 kilometers apart. But the sexual odor of the female does not disappear after fecundation. It remains in queens as well as it does in other living beings.

During an apicultural demonstration I was transferring a Carniolan colony and placed the queen in a cage so as to give the students opportunity to examine her more closely. After a time this queen was returned to the bees and the cage was laid a few feet away. After the operation, I went to get the cage and was surprised to see it covered with young bees which had been accidentally scattered in handling the frames. They had been attracted by the odor of the queen though she was in there no longer.

Another time, after having a transferred colony, I noticed the bees scattering in every direction. The queen was missing. Luckily I had another queen in reserve in a match box. As soon as this match box was placed in the hive, the bees gathered around it and formed a marching line from the outside while fanning their wings. I liberated the queen, and it goes with-



AT THE COVERDALE FARM NEAR DELMAR JULY 7.



IN THE APIARY AT COLO LOOKING FOR QUEENS.

out saying that she was well received.

The sexual odor is manifested not only by the queen but by the entire colony. This may be exemplified in uniting swarms. There is no difficulty in uniting primary or secondary swarms together. But if we try to unite a primary swarm with an after swarm, it usually results in a failure. The reason is that their sexual odor is different, the secondary swarm being under the excitement of rut, while with a fecundated queen the primary swarm is not under such excitement.



HIS FIRST EXPERIENCE WITH BEES WAS AT THE COLO FIELD MEET.

The knowledge of the role played by odor in the management of an apiary and in the life of the bee facilitates the conduct of the apiary. But the "behavior" of both the bees and the apiarist is also an important factor which we must not undervalue. An experienced apiarist working quietly at his bees, handles them with greater success and is less stung than a beginner. It also happens that a frightened queen is sometimes attacked by her own bees.

How about Mr. Arthur C. Miller's success in his method of introduction? It is based upon the same reasons that cause the success of beekeepers who introduce queens by putting the colonies in the position of swarms. In either case the bees are reduced to despair. An artificial swarm without a queen, having no resources, will accept any queen given. By the Miller process the colony is so disturbed, excited both by the smoke and the want of ventilation, that the bees are only looking for safety from the terrible conditions created. The combination of smoke and of this excitement produces a distinctive odor which pervades the entire hive, and it is for those reasons that the queen is accepted. So the method of Mr. Miller depends upon the same factors as other methods but in a different manner. His great merit consists in having supplied so simple a method, which will render great services to beekeepers.

Zurich, Switzerland.

Second Iowa Field Meet

BY FRANK C. PELLETT.

THE second Iowa field meeting, which was held at the Hall apiary at Colo on June 10, was a decided success, although the attendance was not as large as had been expected. The weather was threatening in the morning, and rain fell not many miles away, but it cleared nicely before noon and those present spent a most profitable day. A register book was kept open, and at the close of the day contained more than 60 names of those in attendance.

The day was spent in discussions and examination of the Hall equipment and bees. After a most excellent dinner served by the Ladies' Aid Society, Prof. Bartholomew, of Ames, gave a very good talk on "Value of Scientific Research to the Beekeeper." Prof. Bartholomew is in charge of the new course in beekeeping at the Iowa Agricultural College, and has outlined some of the things that the State should undertake, which the individual is not in position to carry on alone.

Most of the Hall bees are very gentle, and although most of the day was spent among the hives, and nearly all were opened one or more times, there was little trouble with stings. One colony proved to be an exception to the rule, and boiled out in the good old style, and raised a considerable commotion. One youngster who had followed operations very closely and asked many questions, had his curiosity entirely satisfied with a souvenir under his eye. He did not again visit the yard.

Altogether those present voted the day a most pleasant one, and Mr. and Mrs. Hall and daughter Annette splendid hosts.

Atlantic, Iowa.

A Century of Progress

BY J. E. CRANE.

A FAMOUS French surgeon made the statement a century ago that surgery had reached such a degree of perfection that it could not be expected to go any farther. Amputations and removals of some external growths, and in extreme cases removal of bone pressure on the brain was about all that could be done at that time. As we look at it now, surgery was then in its infancy.

With the discovery of anesthesia, with chloroform and ether, a new start was made in the art. The discovery that mortification was the result of microscopic bacteria was a wonderful help. Then came antiseptic treatment with increased skill until today the surgeon goes to the very center of the body and head of a patient. Immense improvements have been made in many other lines. Methods of travel have changed until today we can cross the ocean or the continent in a few days, or with our own conveyance travel over our country roads at 30 miles an hour. In fact, the dream of the ages has come true when a man may fly over mountains and valleys, rivers and lakes.

How about beekeeping? A century ago there had been little improvement in it over that of 2000 years ago. The studies of Langstroth gave us the movable-comb hive; placing beekeeping at once on a solid foundation; eliminating the element of chance or guess work; enabling us to accomplish work we had previously not dared to attempt.

To subdue and keep the bees in subjection, Quinby soon brought out a hand smoker, the forerunner of all our modern smokers. With smoker and a veil we were masters of our bees.

But more was desired. How nice it would be if we could take the honey out of the combs and return them to the hive to be filled again! Very soon a thoughtful German brought out the honey extractor. I remember, about 1868, attaching a cord to the ceiling overhead, and after twisting it very tightly, fastening the other end to the bail of a pail in which I had placed a comb, and let it whirl just to see if it would work. And it did, and in 1869 I made a machine with which I took 240 pounds of honey from one hive. What dreams of future success were mine!



FIELD DAY GROUP AT COLO, IOWA, JUNE 10.

But we found that the larvæ would come out of the brood-combs with the honey, for we had no way at first to keep the queen from laying in the extracting combs. So some ingenious mechanic made the queen-excluding zinc for honey-boards. To this was added an escape to remove the bees from both comb and extracting supers. That has saved us a great deal of time and vexation.

We can now save our combs already built, and get much more honey than before. But comb was so valuable, why could we not in some way make artificial combs? To help the bees, I remember feeding or giving them thin scrapings of wax which they accepted and worked into their combs. After many experiments and many failures comb foundation was brought out in its present form; one of the greatest helps to modern beekeeping.

Honey boxes or supers were mostly made of $\frac{3}{8}$ or $\frac{1}{2}$ inch lumber, of all shapes and sizes, with sometimes a little glass in one end to show the comb. These were sent to market in dry-goods boxes, or even barrels. Later came glass boxes, and then the beautiful and convenient single combs with shipping cases to match them in appearance.

I must not forget the introduction in this country of Italian bees, which gave a wonderful impetus to advanced beekeeping. It gave a fresh interest in artificial queen rearing until it has become a science of itself, and adds immensely to the pleasure and profit of keeping bees.

One hundred years ago it was thought that buckwheat was about the only farm crop that would amount to much for bee pasturage, but about 1866 alsike clover was introduced as a valuable plant for both forage and honey. In 1869 my brother and I had two acres in bloom. What a sight! It well repaid for the seed that cost us \$1.20 per pound. In this same year M. M. Baldridge wrote to the American Bee Journal extolling the value of sweet clover for bees, which is now becoming an important factor in many places. Since that time alfalfa has shown its ability,

especially in the West, to yield honey abundantly. These have all become important farm crops, and will help to make good the loss from our diminishing basswood forests.

One hundred years ago little was known of brood diseases. Since then they have been so carefully studied that we can very largely control them. In many, or most, of our northern States we have bee inspectors to instruct and assist beekeepers in overcoming these drawbacks to successful beekeeping.

Our modern wax extractors are almost as much of an improvement in getting wax out of old combs as the honey extractor in removing the honey from the combs. Methods of handling bees, prevention of swarming and marketing honey have greatly improved. Of beekeeping literature there was little in this country. But we have had for many years "Langstroth's Hive and Honey Bee," "Mysteries of Beekeeping Explained," by Moses Quinby, "Root's A B C," Dr. Miller's "Fifty Years Among the Bees," "Advanced Beekeeping," by Hutchinson, and other smaller works. Several periodicals devoted almost exclusively to the interests of beekeeping give us everything of value or helpful. The Bureau of Entomology of the Department at Washington, D. C., has for many years been working with us and for us in solving the problems beekeepers have not the time to work out.

With improved methods and implements during the latter part of the last century, honey became so abundant that the price went very low. I was able to buy the choicest white sage honey in the Boston market for 6 cents a pound. But the low price and abundance led to its use in cooking and manufacturing; a single firm, I am informed, now takes about 100 carloads a year for this purpose. Its use as a table luxury is increasing, and it can now be found in hotels, restaurants and dining cars, as well as on the family table.

The immense value of bees in the cross fertilization of flowers has been

discovered in recent years. While this does not perhaps add to the wealth of the beekeeper, it may add greatly to his happiness to know that his bees are of as much value to his neighbor as to himself.

Has beekeeping now reached such a degree of perfection that there will be no further improvement? We do not think so, for there are yet many problems not less difficult of solution than many of those already solved. How fascinating the business of beekeeping seems, compared with even 60 years ago!

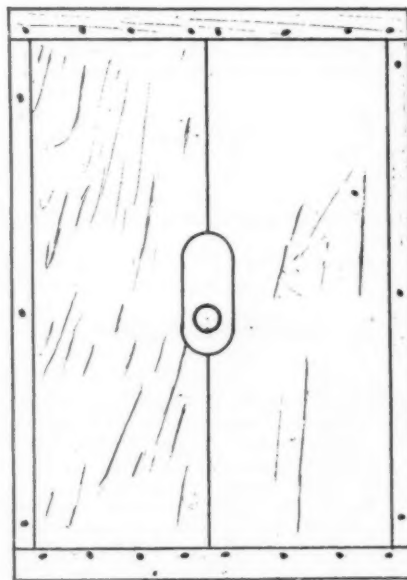
Middlebury, Vt.

The Bee-Escape Board Improved

BY GEO. A. BOYUM.

A BEE-ESCAPE is a device to get the bees out of the supers. It permits them to leave the super and prevents their return.

Illustration: A represents a common bee-escape board with a Porter bee-escape in the center. When a bee-es-



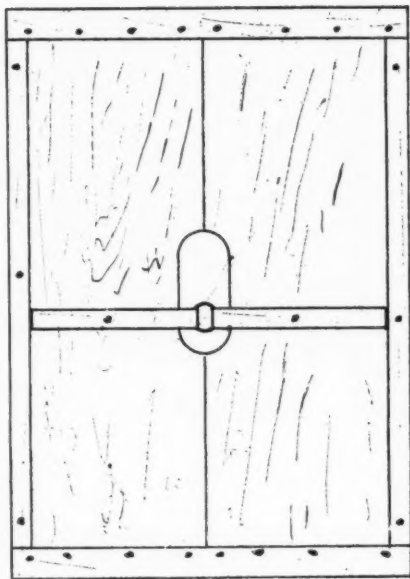
A.

ORDINARY ESCAPE BOARD.

cape is placed under a super, the remaining bees at once begin to look for a place to get out. Naturally they go first to the corners or cracks where the light comes in, in search for an exit. With a board like A, the bees follow the edge or corner around the board probably several times before they chance to cross over the middle of it and discover the opening through the escape.

With a board like B, having two slats nailed to it, as shown in the illustration, the bees may begin to follow the edge or corner at any point, and will always be directed right into the opening in the escape. With this added improvement all the bees leave the super in much less time.

The slats should be fastened by only one nail in the middle, so that they



B.

THE SLATS TACKED ON.

may be turned as shown in illustration C, thereby permitting the escape to be taken out. The slats serve to hold the escape, tin or screen in place; they should be $\frac{1}{8}$ -inch thinner than the outside rim, i. e., 3-16 inch thick for the common bee-escape board. The bee-escape boards should, however, be $\frac{3}{8}$ -inch deep with $\frac{1}{4}$ -inch slats across the center.

Rushford, Minn.

Initiating Father

BY W. EDGAR WOODRUFF.

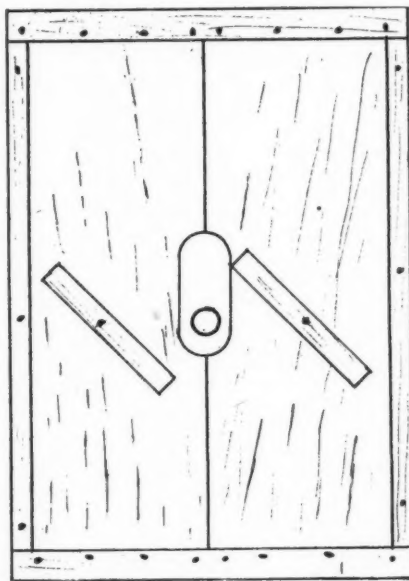
UP to this time mother had always been the bee-man at our house. Father's closest acquaintance with the winged tribe consisted of cluttering up good lumber in an effort to nail "ready made" hives together, and in sampling rather freely the liquid sweets when they were placed upon the table. Yes, and it must be confessed, that father had been known to boast to our neighbors of the fact that this "new rig" or that new piece of furniture was purchased with money that *we* made out of our bees.

Mother had grown up in a bee-yard, so to speak; had made her way through college by means of them, and so nothing was more natural than that she should tend a few bees. That was all very well so long as they could be kept in our own bailiwick, but when mother branched out and leased a large out-yard the bee business began to take on a serious aspect. At least it seemed so to father, for it began to be hinted around the table and in the secret councils of the home that father might now and then contrive to take a hand. But father always managed to keep both of his hands occupied with other matters. The fact is, he made it a point soon after this out-yard deal was put through to secure a job that took practically all of his waking hours. But somehow, scheme as he might, there would come sneaking into father's ken

the consciousness that sooner or later this expanding bee business would call loudly for a lift from his right arm.

Before extracting time father burnt up great areas of gray matter trying to figure out a way to keep his vacation from coinciding with that eventful and dreaded occasion. Finally a neighbor with strong arms and a somewhat intimate acquaintance with the secrets of Father Langstroth, was employed to assist mother in taking the honey. So while these two were immersed in the mysteries and pleasures of Honeyland, father was wading knee-deep in a certain trout stream. But even there father's mind was not entirely at peace. The "blue jinks" kept whispering to him that sooner or later his day—his Waterloo—with the bees would come. And come it did, and that with a vengeance.

On Sept. 1, father's job ceased, petered out, *vamoosed*. Not that he got fired, but that the statute of limitation was called upon that sort of work. This left father upon the high seas of idleness, which state was at once pounced upon by mother as affording the proper hiatus for father's initiation into bee lore. (Right here, gentle reader and frowning editor, let me



C.

ESCAPE BOARD ACCORDING TO GEORGE A. BOYUM.

confess to you that the father in question is yours truly. So, by your leave, I shall hereafter use the personal pronoun.)

I said my job ended on the 1st. It was just one day later when my wife—in a burst of confidence, like she was disclosing some glad, good news—told me that the late crop of honey was just fairly groaning at the out-yard for somebody to extract it.

"Dad," said she with her sweetest coo, "you and I are in for the finest little outing of our lives. We will take the small rig, a camp outfit, and you may take your fishing tackle—what a time we will have!"

Whenever my wife wishes to take the

sting out of a disagreeable thing she promises me a day's fishing. However, upon this occasion a deep blue "funk" filled my horizon, and the silver hope of a day with the finny tribe failed to cause the clouds to lift. For, to tell you the truth as between man and man, I was mortally afraid of bees. One was sufficient to set my nerves to buzzing like a dentist's torture-machine, while the thoughts of facing millions of them—oh, what's the use?

There came to my mind the memory of that occasion when I proposed to my wife, or rather, when I first attempted to propose to her. For, as I stated before, her mother kept bees. Yes, most decidedly she kept bees—kept them in the garden, the backyard, the front yard, and upon the front porch. In fact, her bees acted as a sort of barrier to keep the young men away from her girls. But, as for me, I was so infatuated that (at that stage of the game) not even bees or yellow jackets, for that matter, would prevent me from dashing headlong where angels were wont to tread. For, believe me, those girls were some enticing!

When I proposed, or to speak more accurately, when I was in the act of proposing, the girl and I were out in the garden where the bees were flying thick and fast. She was plucking lilac blossoms, and I was upon my knees declaiming—

"Doubt that the stars are fire,
Doubt truth to be a liar,
But never doubt my —."

Just then something happened—happened big, swift, effective. That last word stuck in my throat. I grasped at the seat of my—oh, it's none of your business upon what particular part of my anatomy that bee deposited its sting.

But I wander from my story. Oh, yes, I was saying my wife wanted me to accompany her to the bee-yard. We went; that is, my wife went. I sat in the rig and supposedly held the lines. One thing only of that 9-mile drive do I remember. My wife stopped at the post-office to get the mail. She remarked she had received a letter which didn't interest me at all. At any rate, it didn't interest me then. I was trying to pump mental vim into my despairing soul in an effort to make myself believe I was not afraid of bees. I, who, since coming to the West, had poked a mountain lion out of a den with a pole; I, who, had met a cinnamon bear face to face and lived to tell the tale—I simply would not be afraid of a mere insect! While thus practicing my soul we reached our goal, and before I realized it, we were at work.

"My! there won't be over five or six hundred pounds of this crop," exclaimed my wife after she had hefted a few supers. She proceeded to smoke the bees out of a dozen or more supers and I carried them into the honey house. Everything was made ready, and she showed me how to uncup the combs of honey and place them in the extractor baskets. She gave the extractor a few turns, reversed the baskets, and then stopped to show me the letter. It was a telegram and ran as follows:

"Be at the Capitol Tuesday morning. Fate of Woman Suffrage Bill hangs on a full representation of our

committee.

(Signed)

"MRS. BIXBY."

"Papa, dear," said my better half, a half formed tear in either eye, "that's tomorrow. I ought to go, but how in the world could you manage this extracting alone?"

The world stopped revolving. The sun stood still. The moon went out, and the stars refused to shine. After about four æons—"Never mind, my dear, I can manage to do it somehow. Possibly get a man to help me," I ventured.

Now I am not on principle opposed to woman suffrage. Indeed, I had written several articles for the local press during the campaign in its favor. And, too, when my wife was appointed upon a committee to go before the legislature and lobby for the bill, I felt that the whole family had been honored, and now that a call had come for her to go I could not say her nay. But as for me—if the seven labors of Hercules had just then been thrust under my nose they would have looked as tiddleywinks beside the dumbfounding work before me. To extract or not to extract—that was the question; whether it was nobler to run and hire a man to "juice" those bees for me, or to stand my ground and fight it out by main strength and awkwardness! I chose the latter course. And before the erstwhile companion of my stings and hysteria was out of hearing I was evermore making that old extractor hum. It hummed so loudly that its toe-hold gave way, a cable "busted," and I was forced to put it in dry dock for repairs.

The next thing that went end-to was when, in my muscular enthusiasm, I turned so fast that the honey overran the pail and found a receptacle in my boot. When my wife left she gave me a spoonful of lard and cautioned me to keep all the bearings of the machine oiled. I wanted to use axle grease or cylinder oil, but she insisted on the lard. I was soon to find out why. I guess I failed to open the gate to the extractor wide enough, for the bottom of the tank soon filled with honey. I began to notice concentric circles of dark honey. On examination I found that a too generous application of lard on the bearings in that neighborhood was the cause of the streaks. Then I was forced to throw away the honey and oil the bearings again.

That night I attempted to put the empty supers back on the hives. Every time I lifted a cover from a hive the bees literally blackened me. The little rascals acted as though they were saying: "Now, here comes the fellow who took our cloak; now he will take our coat, also. Let's go for him." And they went. My veil was the first one Eve made for our ancestor, and my gloves had ringworm in the fingers. To enhance my esteem for the job, I wore low shoes! Now, don't smile, you smug, complacent veteran! I maintain there is nothing funny in a bee sting. It's the most matter-of-fact, business-like transaction I ever met with. But there are some folks who are mean enough to smile or even guffaw when some poor dupe gets the "hot stuff."

The following day I managed to

"swipe" 25 or 30 supers from the bees and began extracting. The honey-flow had ceased; the bees began to "whee-whee" all around the house for a taste. I couldn't keep the uncapping knives hot. The honey was so thick the extractor wouldn't throw it out. I got hot and began to slam-bang things around in great shape. In the *melee* I turned over 5 gallons of honey, which proceeded to splash out of the honey house to feed the bees. I soon had the nicest mess of robbing on my hands you ever saw. I was still warm under the collar when the uncapping knife ricocheted over a bumpy comb and shaved a quarter-section off the palm of my hand. A little later my shirt sleeve caught in the free-running crank of the extractor, which incident left me in a state of statuesque nudity. Then I sat down to perspire and meditate. "Thinks I, if these are the joys of beekeeping spoken of by the A B C book, then let me to more peaceful pursuits; such, for instance, as lion taming or lassoing crocodiles."

The man who had made up these hives had evidently got hold of the wrong instruction sheet—possibly a sheet explaining how to put together a Wright aeroplane. The tin rabbits

were put in flat so that the rib stuck out inside the hive. The frames were the Hoffman shoulder spacing type. These he had nailed so that both shoulders were on the same side of the frame. The bees had been trained to swim in propolis and subsist upon slumgum. So that the tools needed to manipulate the hives consisted of a crowbar and a can of nitroglycerine.

In spite of all these things, like Paul of Tarsus, I persevered. By the last of the week I finished the job, and Sunday morning greeted my smiling family at home.

"My, but you are a mess!" greeted my better three-quarters. "You look as though the land was flowing with milk and honey, and there were no boats for you to cross in. But were you as successful on your mission as I on mine?"

"Three thousand pounds," replied I boastfully, "and a wagon load of cap-pings! But say, old girl, do you know I'm the biggest fool that ever swatted a bee or fanned an extractor."

"How's that?" asked my wife anxiously.

"Why, I went and bought that bloomin' yard."

Cottonwood, Ariz.

DR. MILLER'S



ANSWERS-

Send Questions either to the office of the American Bee Journal or direct to
DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Requeening During Summer

In reading an old Bee Journal of nine years ago (1905), I noticed an article on "Requeening During Summer," by its present editor, in which he says: "It is a mistake to requeen colonies that have good prolific queens just because they are two years old." Is that still his view?

ONTARIO.

ANSWER—"A bird in the hand is worth two in the bush," and while requeening we may replace a prolific queen by one equally prolific, I have seen so many good queens prove good the third year that I prefer not to replace a first-class two-year old queen by one whose ability is unknown to me. The bees usually requeen in good time, if the matter is left to them. But with an inferior queen or one just fair, requeening is necessary.—C. P. D.

Requeening

1. Is a table cloth an advantage on frames; if so, state what months to keep it on in Ontario?

2. Colonies with one, two or three cells of European foul brood, say first of June, and if I kill the queen the last half of clover flow and let these bees rear their own queen, will this cure foul brood? If so, state time to do it. Clover flow from June 20 to July 20.

3. If hives are broodless and queenless by June 1, and if given a frame of eggs, larvae, and sealed brood to rear a queen, will the queen be fairly good?

4. If I lift a frame of brood above queen-excluder, will the bees start queen-cells; then when queen is hatched take off excluder? Will the young queen go down and kill the old queen?

ONTARIO.

ANSWERS.—1. You probably mean enameled cloth or oil-cloth. I used such coverings at one time, but have not had any for years, having nothing between top-bars and

flat covers, except when supers are on. I think they are not in use nearly so much as formerly. If you use such coverings at all, you will use them at any and all times except when supers are on, and may even use them over supers.

2. A cure would be likely to follow. Better not wait until the last half of the flow, as the case would be getting worse all the time, but act at the beginning of the flow. But if only two or three diseased cells are present, and the queen is good, all you need do is to cage her in the hive for 10 days.

3. Young bees are the ones to rear a good queen, and in the case you mention there are probably few or no young bees, so the resulting queen would not be likely to be very good. The best thing to do with such a colony is to break it up and unite with another colony or with other colonies. If you haven't the heart to do that, then a better way than the one you mention is to give your queenless colony the queen of some other colony, and let that other colony rear its own queen.

4. The bees are not at all certain to start cells over an excluder, and if they do, when you take away the excluder the young queen is likely to be killed if the old queen is a good one.

Large Hives

To prevent swarming why don't they use a larger hive than they do? They say a colony swarms because they haven't room to work; also the queen runs out of comb to lay in.

OREGON.

ANSWERS.—"Why don't they?" They do. Ask Dadant & Sons, and you'll find they use

American Bee Journal

hives much larger than most others. And, as you say, they have comparatively little swarming. Like enough they think the reason why all others do not use such large hives is because all others do not know enough; but they're a rather modest lot and wouldn't say such a thing out loud. But there are some who, no doubt, like myself, would use a larger hive than they now have if they were to start afresh, but when one has a full stock of hives on hand, it is not easy to make a change. However, the Dandants have nothing on me as to size of hives after all. Up to the time of putting on supers this year, I had 16-frame hives; that is, I had two stories of 8 frames each. No, indeed, I'm not going to be outdone by any lot of Frenchmen in the way of being liberal in giving room to bees.

Stopping a Swarm—Best Breeders—Price of Bees

1. Is there any way to stop a swarm of bees that are passing by you going to the woods; if so, how?
2. Which are the best bees to breed from, Italians, Carniolans, or others?
3. What is the difference between an untested queen and a breeder?
4. What are common bees worth in old box-hives?

ARKANSAS.

ANSWERS.—1. Some have reported success by flashing upon the swarm the reflected rays of the sun by means of a looking-glass. Perhaps the most reliable thing is to throw upon the bees a strong spray of water.

2. Some prefer one, some another, but the majority prefer Italians.

3. When applied to Italians, a tested queen is one old enough to have produced workers, and those workers show that the queen is pure and purely mated by having three yellow bands. A breeder is a queen supposed to be exceptionally good, so as to be a desirable queen to breed from. You can call your best queen your breeder, and she may or may not be a very superior queen.

4. There is no standard as to the price. In different places they may be worth \$2.00 or less, up to \$5.00 or more.

Emptying Out Partly-Filled Frames

What is the best I can do with frames partly-filled with honey; that is, not "ripe"? Would you put them on hives to be finished up, or let the bees clean them out in the fall, if they will, or what would you do?

PENNSYLVANIA.

ANSWER.—If you put those partly-filled frames over hives in fall to be emptied out, the bees may or may not empty them. If you expose them in the open they will assuredly empty them promptly; but they will also tear to pieces the tender new comb. You may avoid this by covering them up and allowing entrance for only one bee at a time. A good way is to mass them on one hive—now and not "later"—then when they are filled and sealed extract, or else keep them for the bees next spring.

After-Swarms—When to Prevent Swarming

In one way I understand that a new queen on emerging goes about and kills or destroys all other queen-cells or emerging queens; but then this seems to me not to tally with what is said in this connection with after-swarms. In the latter, one queen takes off a swarm, then a later queen takes a second one, and so on. Now, if the first queen really did settle all about other cells and queens, how could there be after-swarms?

2. When one examines a colony and finds queen-cells, how can one satisfy himself as to whether the latter are of a colony that has already swarmed or that the colony is preparing to swarm? I meet with cases in which it seems to me that there are lots of bees, so I feel non-plussed to recognize

whether I should treat such colony to prevent swarming or not. PENNSYLVANIA.

ANSWERS.—1. When a young queen emerges from her cell, her first care, under any and all circumstances, seems to be to kill all rivals in their cells, and this she does by digging into the side of the cell. So strong is this destructive feeling in her, that a good many times I have known a young queen in a nursery, where she could get at no other queen-cell, to dig a hole in the side of her own cell after emerging from it. If matters were left entirely to her there would be no after-swarming. But the workers have the deciding vote, and if they decide there shall be an after-swarm they stand guard over the cells and will not allow the young queen to destroy them. Then it looks a little as if the queen said, "Well, if I can't get rid of these hated rivals, at any rate I won't stay in the hive with them," and off she goes with a swarm. As soon as the swarm leaves, generally all guarding of the cells ceases, all the virgins sufficiently mature emerge from their cells, fight until only one is left, and she is allowed to destroy all remaining cells. If, however, the bees decide upon further swarming after the first after-swarm, only one queen is allowed to emerge, and she goes off with a swarm, and this may be repeated until the last swarm issues.

2. It is not always easy to decide whether a swarm has issued or not. If you find sealed cells, brood in all stages, and eggs, and then succeed in finding the old queen, you may be sure there has been no swarming, unless it be that a swarm has issued and returned, which may happen if the queen is clipped or unable to fly. If you do not find the queen, then you can only guess by the number of bees present. If there are no eggs, then the chances are that the colony swarmed three days or more ago.

Robbing—Feeding Weak Colonies—Swarming When There Is No Honey to Gather

1. If bees begin robbing a hive can it be stopped, and how?
2. The honey-flow seems to be over here, and I have three weak colonies with very little comb, but nice good queens. How

would you feed them so other bees would not get to the feed?

3. Would you put sugar syrup out in the open for all of the bees to eat, or would it have a bad influence on them working on the flowers later?

4. Will bees swarm when there is no honey to gather?

ILLINOIS.

ANSWERS.—1. If bees have a good start at robbing a weak colony, it is a hard matter to stop them. Perhaps the best thing is to take away the colony, putting it down cellar for two or three days, and put in place of the hive another hive like it, containing some comb and a little honey. (If you leave nothing for them to work at, they will attack one or more of the nearest colonies.) When they have cleaned out the little honey, and satisfied themselves there is no more to be had, they will quietly give it up. Then, after two or three days, return the colony to its place, closing the entrance to a very small space, perhaps allowing passage for only one or two bees at a time, and it may be that the robbers will not make another start, especially if a good queen is present. But if the colony is queenless, the case is rather hopeless.

Sometimes robbing has commenced at a fairly strong colony with a good queen. The first thing is to limit the entrance. Perhaps painting carbolic acid about the entrance will answer. A pretty good way is to pile hay or straw a foot deep in front of the entrance and keep it well wet with water.

Generally robbing is owing to some carelessness on the part of the beekeeper, and prevention is better than cure.

2. Use a Miller feeder in the evening after flight is over, and there will be no trouble. Other feeders can be used. If you happen to have none you can use a crock-and-plate feeder. Take a gallon crock, or some other size, put sugar in it, and an equal measure or weight of water, lay it over a piece of heavy woolen cloth or four or five thicknesses of cheese-cloth, and on this lay a plate upside down. With one hand under the bottom and the other on top, quickly turn the whole thing upside down, and your feeder is ready. Take the cover off your hive, set over it an empty hive-body, set your feeder in it, and cover up, being sure that



COZY CORNER FOR A RETIRED BUSINESS MAN—ITALIAN BEES AND BURBANK PLUMS. CHAS. W. BRIMHALL.

American Bee Journal

all is bee-tight.

3. It will do no harm; only the bees that need most may get least.
4. Generally not; but sometimes they do foolish things.

In Preparation for Swarming Does the Queen Stop Laying?

In preparation for swarming, does the queen ever *entirely* shut down laying eggs, so that if no eggs can be noticed in the hive it invariably indicates queenlessness?

PENNSYLVANIA.

ANSWER.—I think the queen continues to lay up to the day the swarm issues. But absence of eggs is by no means a sure sign of queenlessness. There may be no eggs, and even no unsealed brood, but a young queen which has not begun to lay.

Miscellaneous Questions

1. Please give me the addresses of every bee journal printed in English. I am now taking Gleanings in Bee Culture, American Bee Journal, and the Beekeepers' Review. Would you advise me to take more?
2. Where can I obtain new barrels for extracted honey? I cannot get them near here.
3. How many queen-cells may I give one strong colony to complete during a good flow, the colony being extra strong? I mean to get good queens.
4. If I give my bees the proper attention, which will give me the most money, comb honey at 20 cents a pound or extracted at 10 cents?
5. How can I tell a pure bred Italian queen? I notice all the queens I buy, and also the drones, vary in markings.
6. Are Cyprian queens more prolific than other races?
7. Will keeping two or more laying queens in the same brood-chamber prevent swarming?
8. I have been trying your plan as given in "Forty Years Among the Bees," to prevent "swarming" by caging the queen 10 days, then destroy all cells and release her. They swarm next day in nearly every case after releasing the queen. What will prevent this?
9. Will bees start queen-cells below the excluder as often as they will above?
10. What are bees doing when they run around among other bees shaking themselves, appearing to be very happy about something?

VIRGINIA.

ANSWERS.—1. The British Bee Journal is published at 23 Bedford St., London, W. C. England. The Beekeepers' Record is published at the same address. By getting a sample copy you can judge better than I whether it is desirable for you.

2. I don't know. Tin cans are used almost entirely for extracted honey in quantity.
3. Some limit the number to 10. But as a colony left to itself rears twice that number very often, it is doubtful whether it is necessary to limit the number so much. Indeed, it is possible that you will do no harm to give quite a large number, say as many as 40; the bees themselves will do the limiting by destroying the excess.
4. Comb.
5. The workers should show not less than three yellow bands. But you may find in a colony of pure Italians black workers that have come from other hives. Look for the downy little chaps that are quite young; amongst them there should be none without the three bands.
6. I don't think they have that reputation.
7. No.
8. I don't have much trouble in that way, and I don't know how to prevent it in your case. So far this year I have mostly followed that "put up" plan, varied a little. When a colony swarms, or I think it is in danger of swarming, two or more frames of brood and bees, with the queen, are put in a hive and one or two empty brood-combs or frames of foundation are added. A dummy is put beside the frames left in the old hive after all

queen-cells in it are killed. The unoccupied space in the hive is left entirely vacant, the supers are put back on it, and the cover is put on. The hive with the queen is now put on top of all. As this hive with the queen has its own bottom-board and is set on the cover of the old hive, of course there is no communication between the two. No attention is paid to any cells that may be in the "put-up" hive; the bees themselves will destroy them. Ten days later all cells in the lower hive are killed, and the queen with her frames of brood is returned. She was merely caged for two days and then freed.

9. I think they will, but I never tried it enough to know. In neither case can you be sure of cells being started at all.
10. I could never tell what it meant; although, as you say, they seem so happy that I enjoy seeing them thus waltzing.

Claiming Swarms—Clipping Queens

1. Do you have any claim to a swarm of bees after they cluster in a neighbor's yard, and how should I go about getting them if they tell me to leave them alone, as they want to keep them? Here is a little experience I had the other day. A large swarm came out about 1:30 p.m. The queen was clipped first of April, so I did not worry when they commenced to get up in the air; pretty soon they began to cluster on a small apple tree in a neighbor's yard about a block away. I threw a little water on them and went home after a box to carry them in, and when I started to get them the people told me to let them alone as they wanted to keep them. I offered them 50 cents and then \$1.00 to let me keep them, but nothing doing. They hived them late in the evening in two large cracker boxes and set them on the west side of the house in the hot sun. Next day the bees left them. The question is did I have a right to go into their yard to get my property?

2. Do you think there is any danger of my bees contracting disease by building my weak colonies with bees out of bee trees in the woods? I find a great many bee trees in the woods, and can use the bees to good advantage in building up weak colonies if there is not too much danger. I had a queenless colony this spring, and went to the woods and cut a bee tree, got bees and queen, brought them home and put them in the queenless colony the first of April, and on May 27 this colony swarmed.

3. How often does a person have to look over the bees to be sure the queens are all clipped? I clipped my queens early in

April. Swarm No. 1 came out and settled on a grapevine in the yard. I could not find the queen anywhere on the ground, so I hived them and found a queen with two whole wings. Swarm No. 2 was the same thing. Swarm No. 3 came out May 31 about 9:30 a.m., and clustered about 8 feet high on an apple tree. I got my hive and step-ladder and proceeded to hive them. I had about two-thirds of them in the hive and heard a roar, and another swarm was coming out of the hive next to No. 3, and the next thing I knew they were starting to cluster with No. 3. I shook the rest of the bees in No. 3 on the run board, and set the hive to one side in the shade. I went to look for the queen in front of No. 4, and could not find her. By this time swarm No. 4 was returning, and about half of them went into their own hive and half into hive where No. 3 had just issued. They did not fight any, and were soon quiet, and gave me a chance to look for the queen. I went through No. 4 hive and found some queen-cells but no queen closed up in the hive, and commenced looking on the ground. I saw about a dozen bees sitting on a brick, and found my clipped queen in the bunch, so I returned her to the hive. What do you suppose became of the other three queens I had clipped? I am sure I did not injure them, as I did not handle them; just raised their wings and clipped them off.

MISSOURI.

ANSWERS.—1. Laws may differ in different States, but in general the law is so long as you keep a swarm in sight you may claim it as yours, and wherever it alights you may go and take it, only you must pay for any damage you do in capturing the swarm. For instance, if you should cut down a tree or a limb to a valuable tree, you must pay for the damage done.

2. Yes, bees may be diseased in trees as well as hives.

3. The number of times it is necessary to look whether a clipped queen has been exchanged for another depends upon many circumstances too numerous to be detailed here. In general it may be said that there is no need to look until the queen is more than a year old so long as the colony does not swarm. Yet there are exceptions even to this.

It is possible that the loss of those clipped queens may have occurred in this way: The colony may have swarmed without being observed, and then the queen was lost, or else the bees balled her, and then a week or so later a swarm issued with the first virgin emerging.

REPORTS AND EXPERIENCES



A Handy Magnet

I have for years used a magnet to clean up my workbench, as with it I can find the smallest brads, screws and nails, as well as nail sets, big nails, cratetaples, flatsprings, and even a stray file. I thought may be others would like to know it.

The honey flow is on here in great shape, and I have all but one colony ready. Swarming has begun with others. I raise brood, *a la* Demaree, and look for no swarms. I use very free ventilation and give lots of room.

A. F. BONNEY.

Buck Grove, Iowa, June 5.

Report from an Iowa Inspector

There has been more calls for inspection work in the southeast quarter of the State of Iowa than ever before. In Iowa county, where the most work has been done, every colony in the town of Williamsburg for at least 2 miles around was diseased with either American or European foulbrood or sacbrood. In a few cases two of these diseases were found to exist in one colony.

European foulbrood has been showing up in a great many new localities.

The honey-flow has been from light to fair in most localities visited. The linden trees are, in full bloom now, and the bees are storing fast from this source. The recent rains will prolong the white clover flow well on into July.

J. W. STINE.

Salem, Iowa, June 23.

Little Honey in Illinois

We have been having a few little showers so the crops are growing good. There will be no white honey in Illinois from a line drawn across the State from Princeton, Bureau county, from Princeton north there will be some white clover.

I am not looking for much fall honey except on the river bottoms. A. L. KILDOW.

Putnam, Ill., June 30.

Keeping Bees in Attics

Mr. Editor, I am glad you have made mention of keeping bees in attics or garrets, for

a better understanding of it. What you refer to is where inexperienced persons have, at the beginning of winter, put one or more swarms of bees in an upper room or garret. The first warm spell that comes they fly out and go to the windows and die. One of my neighbors used up two fine colonies in this way. The varying temperature does not seem to have much effect on bees, as we have had them for years in the hottest attics on earth; one in particular that seemed as hot as an oven. I feared the combs would melt down, but they never did, and last year, although so dry, they gave 50 pounds of comb honey.

But I would not advise putting bees in attics or lofts if you can build a suitable building of the size required in your yard, as it is much more convenient than going up and down stairs. But in the cities this is the only way, as bees placed anywhere above the second floor do not trouble anything on the ground, and it seems to be a great source of pleasure as well as profit to the city dwellers to have bees in their homes.

We set them by the wall and cut a good fly hole, or if we put them at a window we cut the fly hole through the bottom sash bar, and in addition make an opening at the bottom of the glass for the escape of any bees that might get inside. We darken all the other windows.

J. A. PEARCE.

Grand Rapids, Mich.

A Little from Basswood

There will be no honey here this year. White clover has all dried up, and basswood is yielding very little now. I hope the bees will gather enough to keep them.

Marceline, Mo., June 20. IRVING LONG.

No Surplus

No honey so far, and poor outlook at present on account of drouth. Very little surplus last year.

FRANK L. GOSS.

Harwood, Mo., June 27.

Poor Season in Missouri

The season of 1914 is one of the poorest in many years thus far, with but little chance of anything to come. No white clover, and basswood did not yield any surplus. Bees are gathering just about enough from sweet clover to live on. They are killing off their drones at a lively rate.

A. A. BALDWIN.

Independence, Mo., June 27.

A Month Late

We are a month late in extracting, but are making it up, as alfalfa is only \$4.00 and \$5.00 a ton here, and the farmers are neglecting to cut hay when it comes in bloom. Today the thermometer registered 115 degrees in the shade, and I am fearing a rain, which always stops our flow for a couple of weeks.

Brawley, Calif. ROY F. BATEMAN.

Crop Failure

The crop here is an absolute failure; no rain since May 4, and much of the vegetation has died outright. We need rain very badly. Hope you have fared much better.

W. E. DRANE.

Mallory Branch, Memphis, Tenn.

Good Report

We secured a big crop of honey, and were glad when the harvest ended. It is the whitest I ever saw.

C. W. DAYTON.

Owensmouth, Calif., July 8.

Not Many Bees

A good honey flow has been on since about July 1, but bees were not in condition to make the most of it.

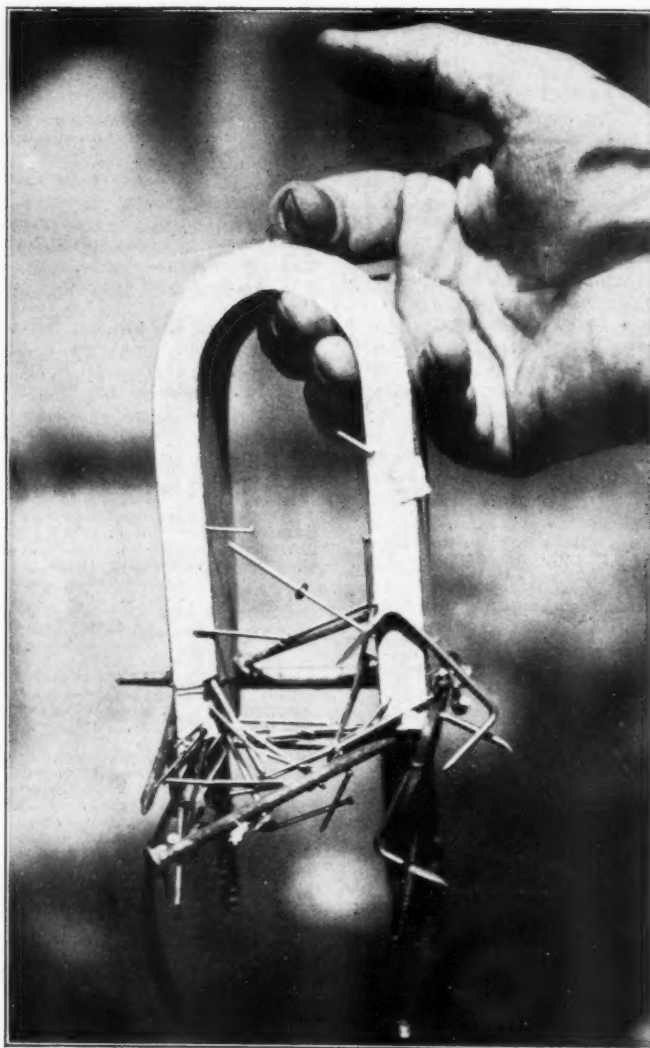
A. E. BURDICK.

Sunnyside, Wash., July 13.

No Crop, But Enthusiastic

This has been a very poor year for bees; so far too dry. We haven't had an inch of rain since April 6. Have not taken a pound of honey, and no prospect of any. I hope they will gather enough for winter.

My wife and I have the bees fever badly, and hope next year will be better. We live in the city and keep nine colonies on a 40-foot lot and have no trouble. Last year I



A MAGNET IS A VERY HANDY THING TO CLEAN UP THE WORK BENCH.

was away from home when our bees swarmed, and my wife had never seen bees hived, but had heard me tell how to do it, so she went after them. They had clustered in a small peach tree. She got a step-ladder and saw; sawed them out and hived them. She never got a sting, much to the surprise of the neighbor women.

GROVER E. MOORE.

Decatur, Ill., June 20.

Two Plants Described

I am sending by parcels post today samples of two plants I am unable to identify. Will you kindly tell me about them through the American Bee Journal, as they may be of interest to others also.

The plant with the burs blooms just after dandelion, and the bees work on it in preference to everything else when it first comes. The clover-like plant is more of a vine, and comes from a crown and runs one or two feet in all directions. Is it of any value as a honey plant?

Princeton, Ill. G. R. RICHARDSON.

The samples being referred to Mr. John H. Lovell, he states:

The smaller plant with clover-like leaves and small yellow flowers is *Medicago lupulina* L. Common names are black or hop medic, black seed clover, black trefoil, black grass, and also non-such. It belongs to the same genus as alfalfa. The species is introduced from Europe, and is a well-known weed.

The other plant with the burs and small purplish flowers is *Cynoglossum officinale* L. Hound's-tongue and gypsy flower. It is a

weed, naturalized from Europe, and is found between Canada, North Carolina, and Kansas. The fruit has the form of a pyramid, and is composed of four nutlets covered with barbed prickles. Each nutlet has the form of a tongue, hence the name hound's-tongue.

Letter from Natal

Do black and silver wattles (acacia) secrete much nectar; if so, what is the color produced and flavor, and do they give much surplus, if any?

The enclosed specimen of a flower grows in profusion on prickly bushes, which have filled our grass lands around here. They appear to be too deep for our bees to extract nectar from, as one rarely sees more than one or two bees on a bush, which must have thousands of flowers. Do you think Italian bees could work on these? I know that they secrete nectar, because when one pulls the flowers and squeezes them, you can see big drops of nectar at the end. Local name tinkerberry; Latin name unknown.

We have the bush flowers all the year around, and it is very hard to exterminate them.

I am given to understand that eucalyptus (gum tree) flowers the whole year around; is that so?

A. NILES.

Natal, South Africa.

[The name "wattles," which our correspondent uses to designate the acacias in question, is special to South Africa and Australia, and probably describes trees or shrubs which differ from our locusts. We have in the United States both the thorny

American Bee Journal

locust (*Gleditsia*) and the black locust or false acacia (*Robinia*). Both are good honey yielders, but the former is rare. The *Robinia*, or common locust, yields excellent honey between fruit bloom and clover bloom. But in very few localities it is in sufficient quantity to yield a surplus. In Italy, it is used for hedges, and we were informed that it makes large quantities of very white honey.

The blossoms which our Natal friend sent us appear to have a corolla similar to that of red clover. Perhaps some others of our South African subscribers may enlighten us as to the name of the bush.

The eucalyptus or blue gum is also an Australian tree, but is much grown in California. Our Californian correspondent, Mr. J. E. Pleasants, has already given us, in the July number, quite a little information concerning the eucalyptus, and he promises additional information, before long, on this subject.

Classified Department

[Advertisements in this department will be inserted at 15 cents per line, with no discounts of any kind. Notices here cannot be less than two lines. If wanted in this department, you must say so when ordering.]

BEES AND QUEENS.

PHELPS' Golden Italian Queens will please you.

FOR SALE—Untested Golden Italian Queens 60c each. J. F. Michael, Winchester, Ind.

BEES AND QUEENS from my New Jersey apiary. J. H. M. Cook, 1Atf 70 Cortland St., New York City.

GOLDEN all-over Queens. Untested, \$1.00. Tested, \$3.00. Breeders, \$5.00 and \$10. 2Atf Robert Inghram, Sycamore, Pa.

FOR SALE—Choice Golden Queens that produce Golden bees equal to any. Wm. S. Barnett, Barnett's, Virginia.

LEATHER-COLORED Italian Queens for sale. Send for price-list. Geo. B. Howe, Black River, N. Y.

PURE TUNISIAN QUEENS, tested, \$1.00; 2-lb. bees with tested queen, \$4.00. Safe arrival guaranteed. Lenoel, Nabeul, Tunis.

UNTESTED Queens, 75c each; \$7.50 per doz. Nuclei, \$1.25 per frame. Bees, \$1.50 per pound. Full colonies, 8-frame, \$6.50; 10-frame, \$7.50. Stover Apiaries, Mayhew, Miss.

FOR SALE—Fine Italian Queens. See my large ad. in this issue. J. F. Archdekin, Rt. 7, St. Joseph, Mo.

ITALIAN Queens for sale. Untested, 90 cts; six for \$4.75. All queens are reared from my imported mother. Jul. Buegeler, Rt. 1, New Ulm, Tex.

1014 QUEENS—Moore's strain of leather-colored Italians. In April at 75c. Bees by the pound and Tested queens. Write us for prices on nuclei. Address, Ogden Bee & Honey Co., Ogden, Utah.

CHOICE ITALIAN QUEENS—Hardy, gentle, white cappers, 3-banded, hustlers. Untested 75c each; six for \$4.00. Select untested, \$1.00; six for \$5.00. Tested, \$1.50. A. J. Seavey, Farmington, Maine.

QUEENS, improved Red Clover Italians, bred for business, June 1 to Nov. 15. Untested Queens, 75c each; dozen, \$8.00; Select, \$1.00 each; dozen, \$10. Tested Queens, \$1.25; dozen, \$12. Safe arrival and satisfaction guaranteed. H. C. Clemons, Boyd, Ky.

QUEENS—10 percent discount for orders received before May 1, to be filled in May and June. Tested, \$1.00; untested, 75c. Dead ones replaced free. 2Atf S. Click, Rt. 2, Box 16, Mt. Jackson, Va.

WE WILL be in the field with good Italian Queens in June for \$1.00 each; 6 for \$5.00. Two-frame nuclei in June without queen, \$2.50; with queen, \$1.00 extra. D. J. Blocher, Pearl City, Ill.

NORTHERN-REARED Queens of Moore's strain of leather-colored three-banded Italians. After June 15, untested, \$1.00; 6 for \$5.00; 12 for \$9.00. Ramer & Gluen, Harmony, Minn.

PHELPS' Golden Italian Bees are hustlers.

ITALIAN QUEENS, 5-banded, for sale. Ready April 15. Untested queens, 75c each, or \$7.25 per dozen. Safe arrival guaranteed. W. W. Talley, Queen Breeder, Rt. 4, Greenville, Ala.

FOR SALE—1913 hatch sel, tested, Aug. \$1.00 each; Sept., 75c each as long as they last; wish to replace with 1914 for 1915 sales. Will sell a good breeder for \$1.00. E. E. Mott, Glenwood, Mich.

HIGH Grade Queens by return mail. Tested, \$1.25; warranted, 75c each; choice breeding queens, \$2.50 each. Italian Carniolan or Caucasian. Virgins of any of the above strain, 3 for \$1.00. Stanley & Finch, 1451 Ogden Ave., Chicago, Ill.

THREE-BANDED and Golden Italian queens. Ready March 1. They have been bred for three points, prolificness, gentleness and honey-gathering qualities. Prices. Select Untested, 75c each; 6, \$4.25; 12, \$8.25; 50, \$12.50; 100, \$60. Tested, \$1.50; Select Tested, \$2.00. Garden City Apiary Co., R. R. 3, Box 86, San Jose, Calif.

CALIFORNIA Italian Queens, Goldens and Three-banded by return mail. Select untested, one, \$1.00; 3, \$2.50; 12, \$8.00. Tested, \$1.25. Bees by the pound a specialty. One 1-lb., \$1.25; one 2-lb., \$2.25. Safe arrival and satisfaction guaranteed. Correspondence invited; circular free. J. E. Wing, 155 Schiele Ave., San Jose, Calif.

REDUCED PRICES for August and September. Untested queens of my 3-banded Italian stock. One for 70 cts.; 6 for \$3.00; 12 or more at 60 cts. apiece. No disease and no better queens at any price. Full colonies and several apiaries for sale. H. D. Murry, Mathis, Tex.

PURE Golden Queens, the best that twelve years can produce. Untested, \$1.50 each. Select tested, \$3.00 each. Breeders, \$5.00 to \$50. Send for booklet on "Bees and Diseases." Geo. M. Steele, 30 South 40th St., Philadelphia, Penna.

GOLDEN QUEENS that produce Golden Workers of the brightest kind. I will challenge the world on my Goldens and their honey-getting qualities. Price, \$1.00 each; Tested, \$2.00. Breeders, \$5.00 and \$10.00. 2Atf J. B. Brockwell, Barnetts, Va.

THE BANKSTON Bees and Queens are as good as the best. Golden, Three-band and Carniolan. Tested, \$1.00 each; untested, 75c. Queens ready to ship April 15. Bees, per pound, \$1.50. Nuclei, per frame, \$1.50. Write us for prices on large lots of queens. Try us and be pleased. Bankston & Lyon, Box 141, Buffalo, Tex.

GOLDEN and 3-banded Italian and Carniolan queens, ready to ship after April 1st. Tested, \$1.00; 3 to 6, 95c each; 6 to 12 or more, 90c each. Untested, 75c each; 3 to 6, 70c each; 6 or more, 65c. Bees, per lb., \$1.50; Nuclei, per frame, \$1.50. C. B. Bankston, Buffalo, Leon Co., Tex.

FOR SALE—Three-banded Italian Queens, bred from the best honey-gathering strains, that are also hardy and gentle. Untested queens, 75c; six, \$4.25; 12, \$8.00. Tested, \$1.25; 6, \$7.00; 12, \$12. For select queens, add 25c each to above prices. Breeding queens, \$3.00 to \$5.00 each. For queens in larger quantities write for prices. Robt. B. Spicer, Wharton, N. J.

DUNN'S Golden Italian queens, bred strictly for business that produce a strong race of honey gatherers. March 1 to Oct. 15. One, mated, 75c; 6, \$4.25; 12, \$8.25; 50, \$32.50; 100, \$60. L. J. Dunn, Queen Breeder, 2Atf Box 337 G, R. R. 6, San Jose, Calif.

PHELPS' Golden Italian Queens combine the qualities you want. They are great honey gatherers, beautiful and gentle. Mated, \$1.00; six, \$5.00; Tested, \$3.00; Breeders, \$5.00 and \$10. C. W. Phelps & Son, 3 Wilcox St., Binghamton, N. Y.

QUIRIN'S Famous improved Italian queens are northern bred and extremely hardy; over 20 years a breeder. Colonies, Nuclei and bees by the pound. Ask for Circular, it will interest you. H. G. Quirin, The Queen Breeder, Bellevue, Ohio.

FOR SALE—We offer our best Italian bees in 10-frame hives, from one to carload f. o. b. here, or in yards of 100 or more complete with fixtures and location. Cash on reasonable time. If preferred, will rent on shares several years with privilege to buy. Particulars on request. Spencer Apiaries Co., Nordhoff, Calif.

QUEENS by return mail or your money back. Guaranteed purely mated. J. E. Hand strain of 3-banded Italians. Bred for gentleness, honey gathering and wintering. State inspector's certificate. Select untested, one, 75c; six, \$4.00; 12, \$7.00. Tested, one, \$1.00; six, \$5.00; 12, \$9.00; Select tested, one, \$1.25; six, \$7.00; 12, \$13. Breeders, \$4.00 each. Write for price on large orders. Safe delivery and satisfaction guaranteed in U. S. and Canada. Ten percent discount on 30 days' advance orders. Reference, First National Bank. J. M. Gingerich, Arthur, Ill.

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WANTED—Comb, extracted honey, and beeswax. R. A. Burnett & Co., 6A12t 173 S. Water St., Chicago, Ill.

FOR SALE—Orange honey in 60-lb. cans, 2 in a case, at 9c per pound. Sample free. James McKee, Riverside, Calif.

FOR SALE—No. 1 white comb, \$1.00 per case; fancy, \$3.25; 24 Danz. sec. to case, and 6 case to carrier. Wiley A. Latschaw, Carlisle, Ind.

FOR SALE—Light Amber Extracted Alfalfa Honey of excellent quality, by car lots in new 5-gal. cans. Can also take care of smaller orders. Address, Roy F. Bateman, R. R. No. 2, Box 15, Brawley, Calif.

THE BEEKEEPERS' REVIEW is now owned and published by the honey producers themselves. It is the paper all honey producers should support. Eight months' trial subscription, beginning with the May number, for only 50c. Sample copy free. Address, The Beekeepers' Review, Northstar, Mich.

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BEE-KEEPER, let us send our catalog of hives, smokers, foundation, veils, etc. They are nice and cheap. White Mfg. Co., 4Atf Greenville, Tex.

BETTER HIVES FOR LESS MONEY—Beekeepers' supplies and standard-bred Italian bees. Write for catalog. A. E. Burdick, Sunnyside, Wash.

THE A. I. ROOT COMPANY'S Canadian House, Dadant's Foundation, Poultry, Supplies, Seeds. Write for catalog. The Chas. E. Hopper Co., 185 Wright Ave., Toronto, Ont.

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American Bee Journal

I GOT 100 pounds of comb honey per colony; my neighbors got none. I'll tell you how for 25c. O. N. Baldwin, Baxter, Kan.

MAKE paint without oil cheaply. Best known for bee-hives, barns, coops, etc. Formula, 15c. I. Holmberg, El Dorado Springs, Mo.

I WILL show any bee man who can raise about four thousand dollars, how to live and grow richer every year without hard labor. Write me. John M. Morgan, Ordway, Colo.

You have been thinking for some time you would like to become a National Beekeepers' Association member. Now is your time; a year's dues to the National and eight months' subscription to our own paper, the Beekeepers' Review, beginning with the May number, both for only a dollar. Address with remittance, The Beekeepers' Review, Northstar, Mich.

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FOR SALE—Single Comb Buff Orpington eggs for hatching, pure bloods: \$1.00 per 15 or \$5.00 per hundred. Satisfaction Guaranteed. W. H. Payne, Hamilton, Ill.

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FOR SALE—Having sold my farm, I now offer for sale 50 colonies of bees in 10-frame hives, with or without supers or supplies. No foulbrood. C. S. Russell, Pine City, Minn.

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WANTED—To buy a yard of bees in New York State, in good location. Mention full particulars, style of hives, etc. Post-Office Box 57, Mahwah, N. J.

CASH PAID FOR HONEY

We are constantly in receipt of inquiries for prices on honey. When you are ready to market your honey, you will find an army of purchasers ready to buy it by advertising your product in the Woman's National Weekly, which reaches 200,000 homes every week. Write for our Special Classified rates and free sample copy. Dept. O C, Woman's National Weekly, University City, St Louis.

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Will sell 300 choice tested Italian Queens at 85c each. These are the very best queens in our 3 apiaries, and will guarantee every queen to give entire satisfaction. If not satisfied within one year we will refund your money.

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This is the season when you will need bees or supplies. Our catalog, which is free, will show you how to save money. We have a large stock and can ship promptly.

Italian queens, \$1.10.

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In strong colonies.

Prices for July & After

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| Untested Queen, .. | .90 |
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| Comb Nucleus—no | |
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| ½ lb. bees..... | .60 |
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Safe arrival guaranteed.

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ITALIAN QUEENS

Untested queens, 75c each; 6 queens, \$3.75. Tested queens, 90c each. Six queens, \$4.50.

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ITALIAN NORTHERN BRED QUEENS

Superior winterers, second to none. My free list explains it all. Untested, 75c for Aug. and Sept. Select tested, \$1.50. Bees by the pound or half pound. Plans. "How to Introduce Queens," 15 cents. "How to Increase," 15 cents; both, 25 cents.

E. E. MOTT, Glenwood, Mich.

ARCHDEKIN'S FINE ITALIAN QUEENS

Three-banded. Bred for persistent profitable production of honey. Prolific, hardy, gentle. The bee for pleasure or profit. One customer says, "Your queen soon had her 10 frames running over with bees that are hustlers. No disease. Satisfaction guaranteed. Orders filled promptly. Ready May 20. Untested, \$1.00 each; 3 for 2.75; 6 for \$5.00; doz., \$9.00. Select tested, \$2 each.

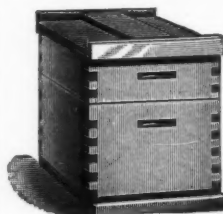
J. F. Archdekin, R. R. 7, St. Joseph, Mo.

Idaho and Oregon Report.—Throughout southern Idaho we had a very early spring; general conditions were perfect. On June 6 we had a very bad freeze, requiring considerable feeding in some cases where bees previous to the freeze had too much honey for proper brood-rearing. Ideal weather has since brought these conditions back considerably but not enough, for we are not going to have more than two-thirds of a crop in general, unless we have a late fall, which is rare here. There is a large portion of Idaho where the freeze did not hit that will have a good average crop.

Word received from eastern Oregon today informs me that a bad hail storm has about knocked their prospects in the head; they also had a frost in June

M. A. GILL, JR.

Hagerman, Idaho, July 20.



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Ship us your old combs and cappings. It means more wax and money for you.

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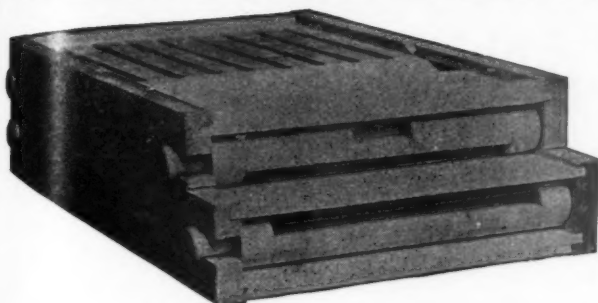
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American Bee Journal

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1. It allows feeding during any time of the day or year—at mid-day or in mid-winter.
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3. It settles the robber bee question as the roller can be quickly turned to bring the small entrance into position.
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 7. It permits undesirable queens to be sifted out by screening the bees through the wire entrance.
 8. It prevents swarms from going to the tops of trees or away to the woods when the beekeeper is away.
 9. It practically eliminates swarming, as the colonies usually show no inclination to swarm. Why, I do not know.
 10. It is adjustable to make a shallow bottom for summer and a deep one for winter.
- It contains many other valuable features which will be apparent to any beekeeper upon investigation, and if it is once tried it will always be used.

8-frame size, \$2.00; 10-frame size, \$2.50. Italian Queens, Breeders, \$10 to \$25.

Nothing sold under \$10.

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TENNESSEE-BRED QUEENS

42 years' experience in queen-rearing—Breed 3-band Italians only

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|-------------------|-----------------|--------|---------|-----------------|--------|---------|------------------|--------|--------|------------------|--------|--------|
| | I | 6 | 12 | I | 6 | 12 | I | 6 | 12 | I | 6 | 12 |
| Untested..... | \$1.50 | \$7.50 | \$13.50 | \$1.25 | \$6.50 | \$11.50 | \$1.00 | \$5.00 | \$9.00 | \$.75 | \$4.00 | \$7.50 |
| Select Untested | 2.00 | 8.50 | 15.00 | 1.50 | 7.50 | 13.50 | 1.25 | 6.50 | 12.00 | 1.00 | 5.00 | 9.00 |
| Tested..... | 2.50 | 13.50 | 25.00 | 2.00 | 10.50 | 18.50 | 1.75 | 9.00 | 17.00 | 1.50 | 8.00 | 15.00 |
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The very best Queen tested for breeding, \$10. 300 fall reared tested Queens ready to mail, \$2.50 to \$10 each.

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Tested queens in March; untested, after April 1st. About 50 first-class breeding-queens ready at any date.

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My bees are the product of many years of breeding by both Swarthmore and Henry Alley. Both names stand out like beacon lights among our past and present breeders, for the best queens ever produced in the United States. Never had foul brood.

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of 3-band stock reared for honey gathering qualities
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I will again have for sale, after April 1st, young queens reared from my best Leather-Colored Breeders. You will make sure of improving your stock and securing a crop of honey if you introduce some of these queens. The Leather-Colored Italians are recommended and used by the largest and most progressive bee-men of today.

Untested, \$1.00 each; \$9.00 per doz., \$75 per hundred. Select Tested, \$1.50 each.

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Untested, \$1.00; 6, \$5.00; 12, \$9. Select Untested, \$1.25; 6, \$6, 12, \$10. Prices on application for tested and untested queens by the hundred. Address,

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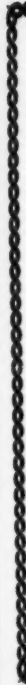
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SPECIAL DELIVERY

During this month we shall double our usual efforts in points of delivery and service. We carry nothing but the Root make, which ensures the best quality of every thing. We sell at factory prices, thereby ensuring a uniform rate to every one. The saving on transportation charges from Cincinnati to points south of us will mean quite an item to beekeepers in this territory. We are so located that we can make immediate shipment of any order the day it is received.

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Our new 1914 catalog contains double the pages of former editions, and requires extra postage. It is filled from cover to to cover with complete lists of goods in every line to meet every requirement of beekeepers. If you haven't received a copy when you read this, be sure to ask for one. It will save you money.

New Features for 1914

Few radical changes have been made this season. It should be noted, however, that we will send out with regular hives, unless otherwise ordered, the metal telescopic or R cover with super cover underneath. The side rail for the bottom-board will be extra length so as to overcome the difficulty experienced by some last season. Improvements have been made in extractors. We shall carry a very heavy stock so orders may be filled with our usual promptness. Write us your needs. Early-order discount this month 2 percent.

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